August 1976 30p

AIRFIX magazine for plastic modellers

Inside: 8th Army armoured car models, 'Dido' Class cruisers, armoured trains and British infantry uniforms

Canberra conversions

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August 1976 Volume 17 No 12

AIRFIX magazine for plastic modellers

Editorial Director **Darryl Reach** Editor **Bruce Quarrie** Art Editor **Tim McPhee**
Editorial offices Bar Hill, Cambridge CB3 8EL. Telephone *Crafts Hill 80010*

On the cover

Top Superb painting by Martin Holbrook of an EB-57E of the 4677th DSES, Air Defense Command, USAF, wearing Alaskan dayglo over its natural metal finish — a marvellous modelling subject for anyone reading Bryan Philpott's article on pages 687-696 inside. **Bottom** 40 mm Bofors anti-aircraft gun in the Maltese 'crazy paving' camouflage scheme which will make an attractive variant for anyone modelling the forthcoming Airfix kit *(A. J. Joyce via Ken Jones).*

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Oldebourne House, 46/47 Chancery Lane,
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Tel 01-405 3611
Advertisement Manager
Brian Harriss

Circulation Department
Surridge Dawson and Company
(Productions) Ltd, Publishing
Department, 136/142 New Kent Road
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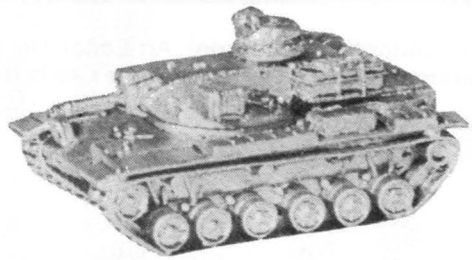

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MC13 French knight with lance

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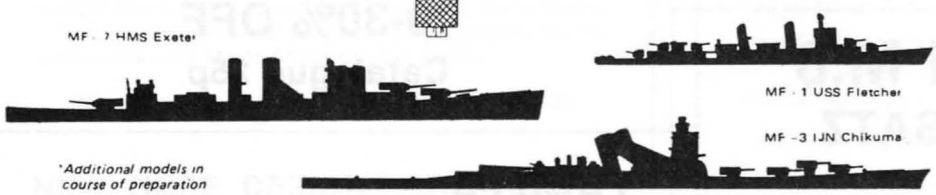

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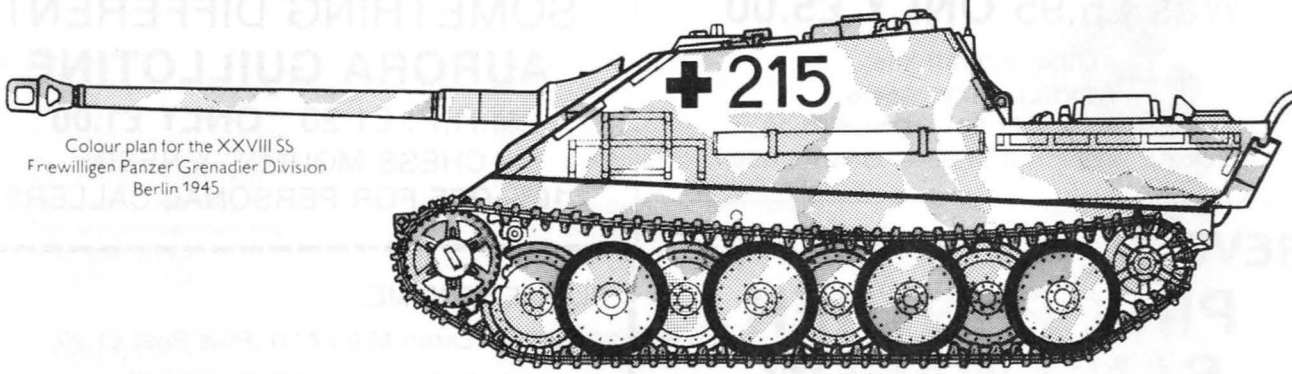

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G1 Officer cloak and double crested Corinthian helmet
G2 Standard Bearer
G3 Hoplite Corinthian helmet in reserve
G4 Hoplite Corinthian helmet attacking
G5 Trumpeter
G6 Peltast unarmoured with Hoplite shield spear attic helmet attacking
G7 Slinger
G8 Archer armoured taking arrow from quiver
G9 Sythian Mercenary Archer unarmoured drawing bow
G10 Spartan Hoplite cloak crested Pilos helmet in reserve
G11 Spartan Hoplite cloak crested Pilos helmet attacking
G12 Theban Hoplite attic helmet attacking
G13 Peltost small shield javelin and Thracian helmet
G14 Theban Hoplite attic helmet in reserve
GC1 Cavalry Officer
GC2 Cavalry Standard Bearer
GC3 Cavalryman armoured shield and spear Corinthian helmet
GC4 Cavalryman unarmoured shield and spear Bocotian helmet
GC5 Cavalryman armoured with javelin attic helmet

ROMAN EMPIRE

RE1 Tribune on foot
RE2 Centurion advancing
RE3 Signifier
RE4 Cornicer
RE5 Aquilifer
RE6 Legionary attacking
RE6A Legionary marching
RE7 Auxiliary with shield and spear attacking
RE8 Auxiliary Slinger
RE9 Auxiliary with shield and javelin
RE10 Auxiliary Asiatic armoured archer
REC1 Cavalry Officer
REC2 Cavalry Standard Bearer
REC3 Cavalryman armoured with spear and shield
REC4 Cavalryman leather armour with shield and javelin

ROMAN REPUBLIC

RR1 Standard Bearer
RR2 Centurion
RR3 Trumpeter
RR4 Princepes mail coat large shield and spear in reserve
RR5 Hasiati mail coat large shield and pilum
RR6 Triari leather armour large shield and spear attacking
RR7 Veleti unarmoured small shield and javelin
RRC1 Cavalry Officer
RRC2 Cavalryman armoured with spear and shield
RRC3 Cavalry Standard Bearer

CARTHAGE

C1 Standard Bearer
C2 Officer
C3 Drummer
C4 Citizen Spearman 1st class armoured shield spear in reserve
C5 Citizen Spearman 1st class armoured shield spear attacking
C6 Citizen Spearman 2nd class leather armour shield spear attacking
C7 Mercenary Balearic Slinger
C8 Mercenary Cretan Archer
C9 Mercenary Numidian Javelinman
C10 Libyan unarmoured spear shield attacking
C11 Spanish Scutaris unarmoured large shield heavy javelin
C12 Gual Mercenary unarmoured spear shield attacking
CC1 Cavalry Officer
CC2 Cavalry Standard Bearer
CC3 Cavalryman armoured spear and shield
CC4 Cavalryman Numidian with javelin
CC5 Cavalryman Spanish unarmoured spear
S7 War Elephant armoured 3 crew

Assyria

A1 Officer armoured with sword
A2 Infantryman armoured with spear and shield attacking
A3 Infantryman armoured with spear and shield in reserve
A4 Standard Bearer
A5 Archer armoured firing bow
A6 Archer unarmoured drawing bow
A7 Infantryman with long mail coat with spear and shield and bow in case in reserve
A8 Unarmoured Infantryman with spear and shield attacking
A9 Armoured Slinger
A10 Unarmoured Slinger with shield
A11 Infantryman in long mail coat with shield and spear and bow in case attacking
A12 Unarmoured Infantryman with shield and spear in reserve
AC1 Cavalry Officer
AC2 Cavalry Standard Bearer
AC3 Armoured Cavalryman with shield and spear
AC4 Armoured Cavalryman with shield and spear and bow in case
AC5 Unarmoured Cavalryman with shield and spear and bow in case
S19 Heavy Chariot with 3 crew

Persia

PE1 Officer
PE2 Standard Bearer
PE3 Immortal attacking
PE4 Infantryman unarmoured spear and shield and bow in case attacking
PE5 Immortal in reserve
PE6 Immortal firing bow
PE6A Shield hung on spear planted in ground for PE6
PE7 Infantryman unarmoured shield and javelin
PE8 Infantryman unarmoured shield and javelin
PE9 Infantryman unarmoured firing bow
PE9A Shield hung on spear planted in ground for PE9
PE10 Armoured Infantryman spear and shield attacking
PE11 Phrygian armoured with crested helmet: spear and shield attacking
PE12 Phrygian armoured with crested helmet spear and shield in reserve
PE13 Phrygian armoured with crested helmet with double headed axe
PEC1 Cavalry Officer
PEC2 Cavalry Standard Bearer
PEC3 Cavalryman unarmoured spear and shield with bow in case
PEC4 Cavalryman unarmoured with spear and bow in case
PEC5 Cavalryman armoured with spear and shield
PEC6 Clibanarius spear shield bow in case on armoured horse
PEC7 Camel Corps armoured spear and shield with bow in case armoured camel
PEC8 Camel Corps unarmoured spear and shield with bow in case unarmoured camel
S20 Sythed Chariot with 2 crew

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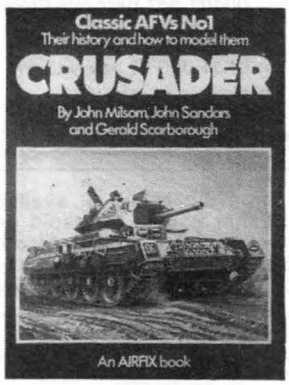

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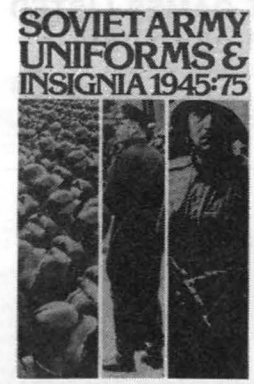

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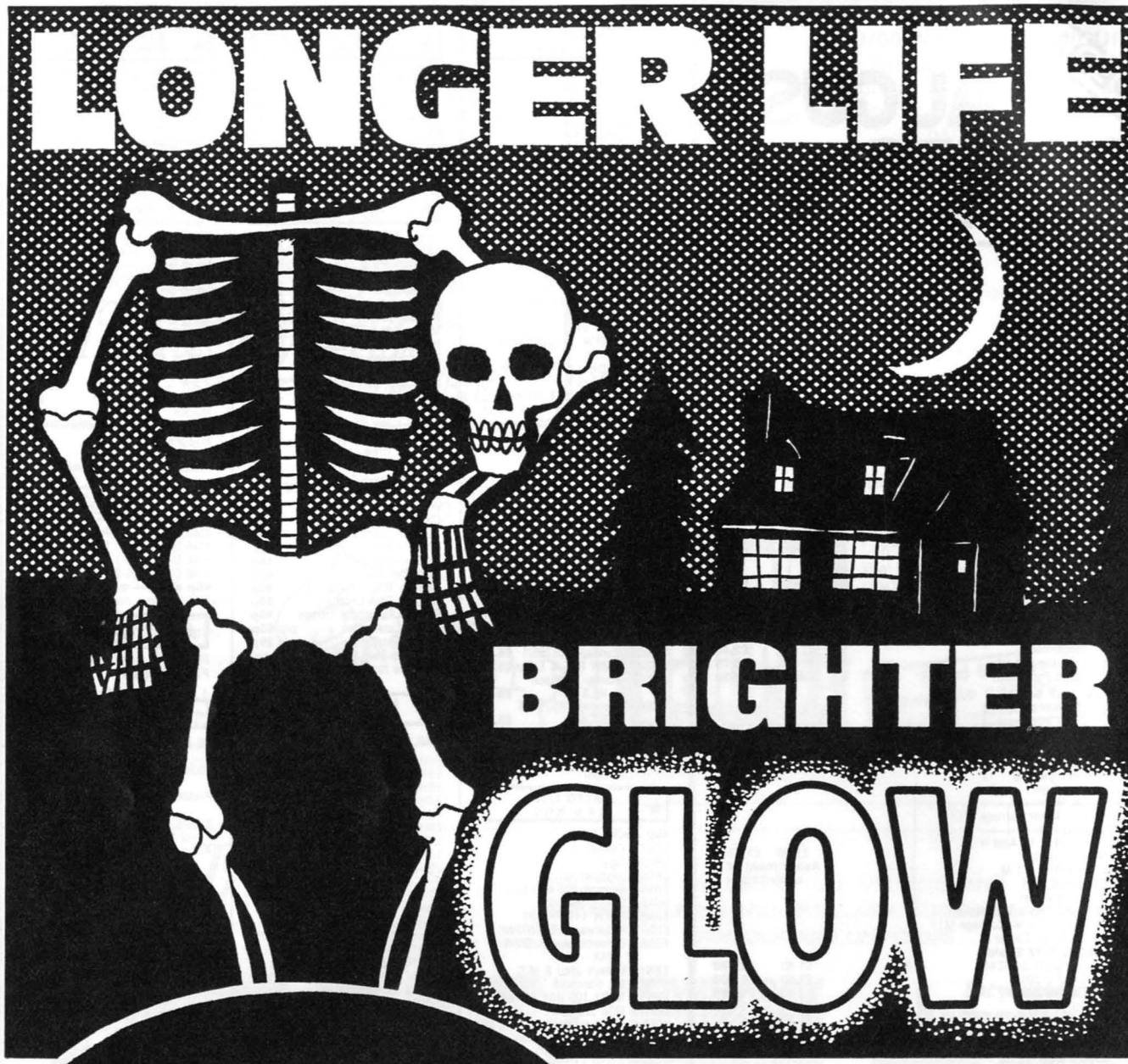

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NEWS FROM AIRFIX

1 Dodge command car

2 M6 anti-tank gun

3 Re-tooled Concorde

4 Command post

TO LAUNCH A completely new kit series for 1976, Airfix introduces the Dodge Command Car and the Dodge M6 37 mm Anti-tank gun carriage. The series, based on six American vehicles in 1:35 scale, represents the all-important support element of an army without which the infantry and armour units would be unable to operate. All the subjects in the new range have a high degree of detail and an excellent finish.

1

BEHIND NEARLY every Allied front line during World War 2 lurked one of the most famous of American light trucks — the Dodge command car. This versatile vehicle played an important role during the war that, indirectly, was to affect its ultimate outcome. One of the Dodge command car's main functions was to carry such great men as General Patton and General MacArthur to strategic points in the field, where they were able to assess the full situation, and come to their historic decisions. Even today, this highly efficient vehicle is still used by numerous forces throughout the world.

The new Airfix kit of the Dodge Command Car is finely detailed and incorporates many of the vehicle's features, including a front windscreen that can be lowered, a simulated canvas top, fitted either open or closed, and a water-tank trailer that was towed along on assignments.

To complete the kit, three sets of markings are provided for either a vehicle of the 82nd Airborne Division HQ in Europe; an 8th Army HQ vehicle in the Philippines and Japan, and a 3rd Army HQ vehicle in Europe (with winch). Retail price is £1.85.

2

THE DODGE M6 37 mm anti-tank gun carrier was developed for its good strategic manoeuvrability and low cost. Unfortunately, it was only moderately successful as it was unable to cope efficiently with the tough terrain during cross-country action.

Mainly used in the Ardennes, the M6 took part in field-to-field combat (using the hedgerows for cover and surprise attacks) with the German military forces who were trying to push their way forward towards Antwerp and the sea. The high silhouette of the vehicle also proved to be a great disadvantage and often made it an easy target for the German guns.

By constructing this new Airfix kit, an attractive, highly detailed vehicle is produced, incorporating all the important features such as the 37 mm anti-tank gun; finely detailed chassis; miniature spare shells, and three crew figures in action poses.

The kit is complete with the inclusion of authentic markings to produce a realistic Northern European sector vehicle. Retail price is £1.65.

Above Dodge command car and water tank trailer. **Below** *Concorde.*

3

HAVING JUST completed the tooling of the company's latest construction kit, Airfix is now able to release the long awaited, up-to-date model of Concorde. This is the company's second kit on this subject, the first being a model of the prototype, released some ten years ago.

In comparison, Airfix's new Concorde kit is much longer and more detailed. It is constructed from 52 parts and measures 17 inches in length, with a 7½ inch wingspan. Considerable effort has been taken with the wings of the aircraft in order to perfect their 'wave form' characteristics and this model can be built using either British Airways or Air France markings. The only 1:144 scale kit on the market to represent the final production aircraft, it was developed in conjunction with much technical assistance from BAC/Aerospatiale.

To celebrate the launch of this new Concorde kit, Airfix plans an exciting consumer competition, opening date June 1, entitled 'Win a Concorde Flight to US in the Airfix Silhouette Competition'. Entry Forms are available from all Airfix retailers and contestants have to identify nine model silhouettes and complete the tie-breaker slogan 'I like building Airfix kits because.....' in not more than 12 words.

The first prize is a British Airways Concorde flight to Washington for two, four days' holiday, plus £100 spending money. 20 runners-up will receive a second prize of a pair of binoculars and there are ten third prizes of an airwave band radio.

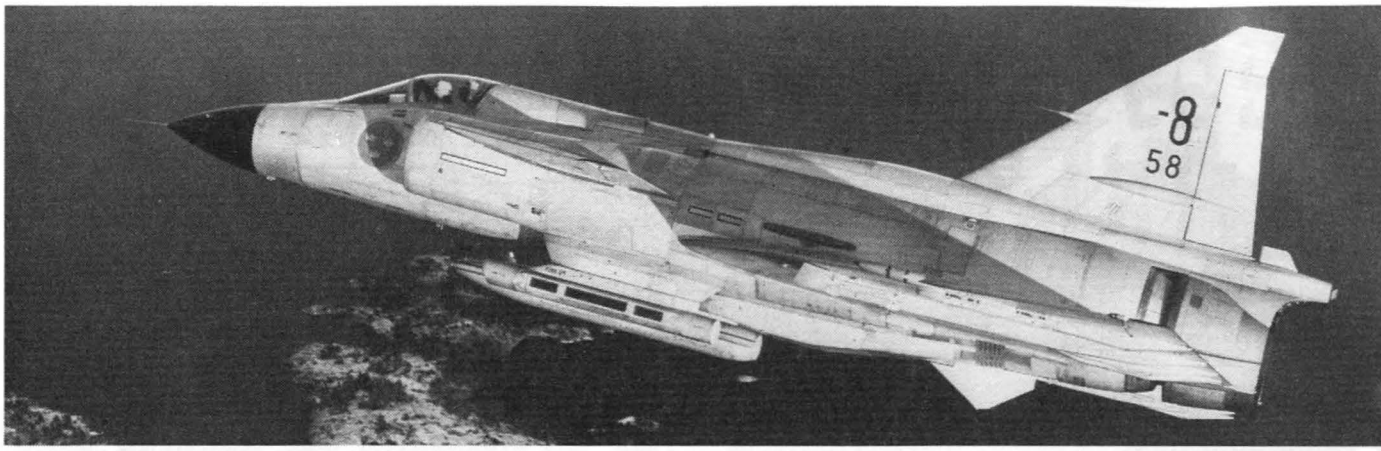
Airfix's new Concorde kit has been designed to the company's highest standards and has a suggested retail price of £1.40.

4

THE NEW Airfix Forward Command Post kit in 1:76 scale is an ideal model for diorama builders and wargamers. It comprises a mixture of injection-moulded parts, including the house itself, which is a scaled-down version of the 1:32 scale strongpoint, and a variety of scenic accessories, with a vac-formed base.

In all there are 79 parts in the kit, ranging from miniature ammunition boxes, coils of barbed wire, corrugated sheets, jerry cans and cable reels, to signboards, pickaxes, shovels, bicycles, log barriers and a motorbike. All of these invaluable 'spares' can, of course, be used with other models as well as the command post, while the shell-torn house can be constructed independently of its base for use on wargame tables.

Although really only suitable for World War 1 and 2 games, because earlier artillery did not normally wreak quite such havoc on structures, we can well picture it appearing in wargames from Napoleonic times onwards. An obvious use will be to replace 'intact' houses on the table with this ruin once they have been hit by bombs or shells, creating a much greater impression of realism. Retail price of this kit is 79p. □



Air, land and sea

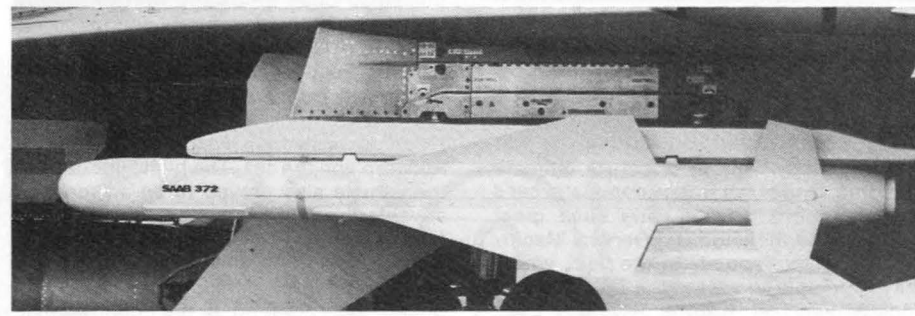
compiled by the editor

Above *The fifth prototype of the new Saab JA37 Viggen fighter, which is serving as a pre-production aircraft. Note new fin profile, similar to the Sk37 two-seat trainer version.* **Below** *The new Saab 372 infra-red air-to-air missile, developed for use on the new JA37 Viggen all-weather fighter* (Saab-Scania photos via Peter Guiver).

New Viggen variant

WITHOUT DOUBT, the Saab Viggen is one of the most interesting and impressive aircraft to appear in recent years, and development work continues on this unusual machine. The latest version to be built is the JA37 single-seat all-weather interceptor fighter, which will also have a secondary strike capability.

The JA37 is powered by a single Volvo Flygmotor RM8B turbofan which has been developed for this new fighter, rated at 12,740 kg/28,085 lb thrust with reheat. Several other items of equipment are also new, including a new long-range radar, which has been under test in a Lansen test aircraft, and a new central digital computer of US design, similar to that used in the Rockwell B-1 bomber.



Yet another American computer for air data information is fitted in the JA37, this having been developed from a similar device employed in the F-14 Tomcat. New Swedish electronic equipment is used for systems displays giving information on navigation, target location and weapon aiming and delivery, whilst new Swedish communication radios are also to be used.

New weapons have been developed for the JA37, and these include an infra-red air-to-air missile, the Saab 372, and a new long-range 30 mm cannon, designed in Switzerland by Oerlikon. This weapon has a rate of fire of 1,350 rounds per minute, with a muzzle velocity of 1,050 m/sec.

Four AJ37 attack Viggens were modified to serve as prototypes of the JA37, whilst the fifth prototype was a newly built machine, flying for the first time on December 15 last year. 30 JA37s have been ordered initially, out of a planned 150 which will replace early Saab 35 Drakens from 1978 onwards. Viggen production should exceed 400 machines, with service continuing well beyond the year 2000! *Peter F. Guiver.*

Air Display Diary 1976

AS SOME OF the items listed below are unconfirmed, endeavour to check if possible before your journey, to avoid disappointment.

July 31/August 1	RAF Greenham Common, Berks	International Air Tattoo
August 1	RAF Cosford	Museum Open Day
August 4 (Wednesday)	RAF St Mawgan, Cornwall	International Air Day
August 7	RAF Bentwaters, Suffolk	USAF Open Day
August 7	RNAS Lee-on-Solent, Hants	RN Open Day
August 8	Middleton St George	Teeside Air Show
August 15	Coventry, West Midlands	Air Display
August 15	Barton, near Manchester	Air Display
August 29	Old Warden, Beds	Shuttleworth Air Day
August 30	Goodwood, West Sussex	Air Display
August 30	Weston-super-Mare	Air Display
September 4	RNAS Yeovilton, Somerset	RN Air Day
September 4	'Battle of Britain At Home Day' at Biggin Hill, RAF St Athan, RAF Finningley and RAF Leuchars	
September 5	RAF Cosford	Museum Open Day
September 5	Waterbeach, Cambs	Burma Star Air Day
September 9, 10, 11, 12	Farnborough, Hants	SBAC International Air Display and Exhibition
September 25, 26	Rochester, Kent	Aerobatic Contest
September 26	Old Warden, Beds	Shuttleworth Air Day
October 3	RAF Cosford	Museum Open Day

The exhibition of German aviation history, called 'Wings of the Eagle', which was described in the February issue of *Airfix Magazine,* at the RAF Museum, Hendon, has proved so popular that it will now remain open until September. *Peter F. Guiver.*

Type 22 frigate launched

HMS *BROADSWORD,* the Royal Navy's first Type 22 frigate, was launched by Princess Alexandra on May 12 at the Scotstoun Shipyard of Yarrow (Shipbuilders) Ltd.

The 3,500-ton ship, 430 feet long and powered by Rolls-Royce Marine gas turbine engines, will have accommodation for some 250 officers and men.

Possessing a first-rate anti-submarine

Continued on page 672

AIRFIX NEW MODELS FILE

GRUMMAN F-14A TOMCAT

The F-14A Tomcat is a twin-tailed, combat aircraft that can be best described as the most advanced air superiority fighter flying in the world today.

The F-14A is a variable geometry aircraft and fits the bill as a replacement for the U.S. Navy's F-4 Phantom for the seventies and eighties.

The prototype F-14A made its initial flight on December 21, 1970, and production aircraft entered USN service four years later. Using the Soviet MiG-25 Foxbat and the late series MiG-21 as yardsticks, Grumman have designed an aircraft capable of surpassing both these advanced machines in combat. The chief advantage Tomcat has over its rivals is its variable geometry wing which enables the aircraft to gain more manoeuvrability over a wider speed range.

The wing can be swept from its 20° fully-forward position for low-speed work, to 68° for supersonic speed and combat use. In addition, leading edge slats are fitted for low speed combat manoeuvring enabling tight turns to be made in the order of 9G – or nine times the force of gravity.

The heart of the Tomcat's weapon system is the Hughes AWG-9 radar and its associated AIM-54A Phoenix radar-guided air-to-air missiles. The radar can be used in the search, tracking and attack modes and targets can be picked up at distances of more than 150 miles and displayed on a TV scope to the missile control officer in the rear cockpit. So advanced is the system that all six Phoenix carried by the F-14 can be fired at six individual targets simultaneously.

The Airfix Grumman F-14A Tomcat accurately reproduces the unique swing wing action of this remarkable aircraft. It contains over 100 parts and you can make either a VF-1 squadron aircraft or a VF-2 machine flying from the carrier U.S.S. Enterprise. The model contains full armaments including six Phoenix Missiles and it can be modelled with the undercarriage up or down.

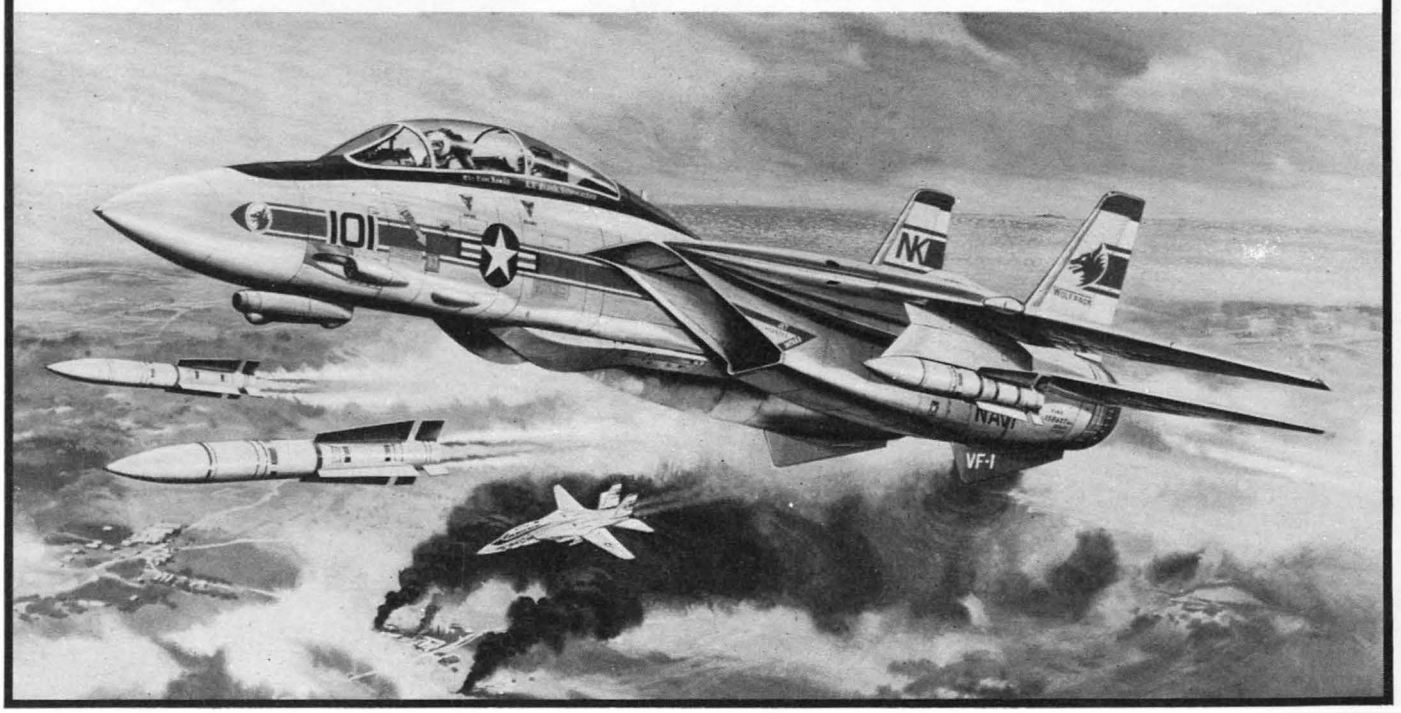
For up to date news and details of the Airfix models get the Airfix Magazine.

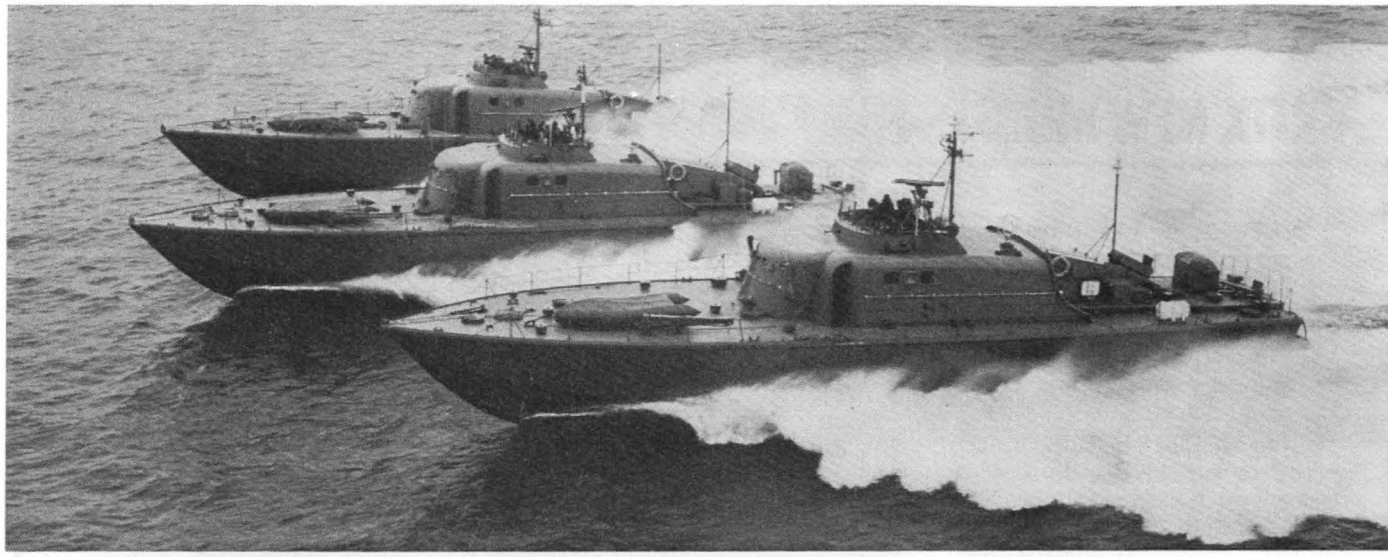
AIRFIX

Grumman F-14A Tomcat 1/72nd Scale Series 5. New to the world's biggest range of construction kits.

Technical Details	
Date of origin:	1970.
Engine:	2×20,900lb. thrust Pratt and Whitney TF30 turbofan.
Top Speed:	Mach 2.34 (1,545 m.p.h.).
Service Ceiling:	60,000ft.
Carrier approach speed:	120-125 knots.
Wing span:	38ft. 2ins. SWEPT. 64ft. 1½ins. UNSWEPT.
Length:	62ft.
Height:	16ft.
Armament:	Phoenix, Sparrow and Sidewinder missiles. Internally-mounted six barrel M-61 Vulcan cannon.

GOOD HOME WANTED FOR A CAT WITH TWO TAILS.





Three of the Royal Navy's 102-ton Fast Training Boats. Sabre, Cutlass *and* Scimitar, *at speed* (Bill Thompson).

capability, HMS *Broadsword* will carry Exocet guided missiles, a Sea Wolf surface to air missile system, and Lynx helicopters. This will be the first Royal Navy ship to have an all-missile armament.

HMS *Broadsword* is the second Royal Navy ship to bear the name. The first, a 1,980-ton destroyer of the Weapons (Battleaxe) Class, was built in 1948 and withdrawn from service in 1964. *Paul E. Beaver.*

Illustrious ordered

THE MINISTER of State for Defence, Mr William Rodgers, announced on May 14 that the order for a second new anti-submarine cruiser, to be named HMS *Illustrious,* has been placed with Swan Hunter Shipbuilders.

The 16,000-ton vessel, to be powered by Rolls-Royce gas turbine engines, will be equipped with the Sea Dart medium-range area air defence missile, and will operate with Sea Harriers and Sea King helicopters. The Sea Harriers will be able to intercept reconnaissance and other aircraft on which the Soviet long range missile forces depend, while the Sea King helicopters will provide a formidable anti-submarine capability.

The first of the class, HMS *Invincible,* which was ordered in April 1973 from Vickers (Shipbuilders) Ltd and is under construction at Barrow, is planned to be accepted into service towards the end of the decade. *Paul E. Beaver.*

Germanair A300s

THE LARGEST machine on show at the recent Hanover Air Show was the multinational A300 Airbus, visible in the colours of two operators. Lufthansa's aircraft came and went on regular services, whilst the second A300B4 to be delivered to the charter and inclusive tour airline Germanair Bedarfsluftfahrt was on view in the show area, and even operated joy-flights!

Germanair was formed in 1968 from an airline known as Sudwestflug, which dates back to 1964, and the headquarters are at Frankfurt Airport. Other types in use include six BAC One-Eleven 500s and some

Continued on page 674

One of the first pictures of the Soviet Navy's newest Krivak Class guided missile destroyers, taken from a Sea King of 820 Naval Air Squadron, HMS Blake (MoD).

AIRFIX NEW MODELS FILE

NORTH AMERICAN F-86D SABRE

The North American F-86D Sabre Dog was the world's first single-seat, all-weather interceptor.

Evolved from the classic F-86 Sabre – America's first swept-wing jet – the F-86D was designed as a pure interceptor at a time when a major Soviet manned bomber attack on the North American continent was considered a distinct possibility.

The Sabre was unique in its day in that it had an all-rocket armament which consisted of 24 "Mighty Mouse" 2.75 inch Folding Fin Aircraft Rockets housed in a retractable ventral tray. The rockets had a range of 4,500yds and could be fired in groups or salvoed.

As well as being in widespread USAF service, foreign air forces began receiving Sabre Dogs in the late '50s, Denmark, Japan and Turkey all being recipients.

On July 16, 1953, an F-86D set a new world air speed record of 715 m.p.h.

The Airfix F-86D Sabre contains nearly fifty parts and is an exact replica of the original.

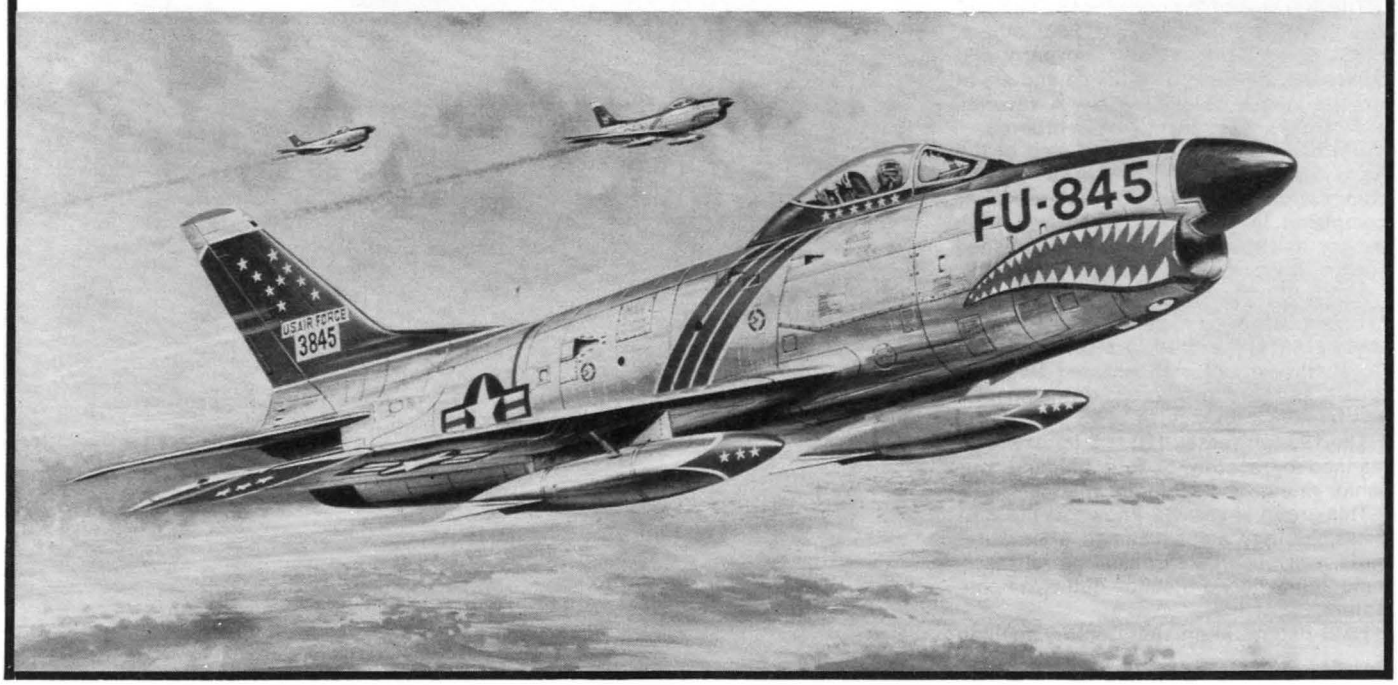
Striking transfers are supplied to make it the shark mouthed interceptor of the U.S.A.F. 520th squadron, Washington or the 512th squadron based at Manston, England. Pilots name transfers are also included.

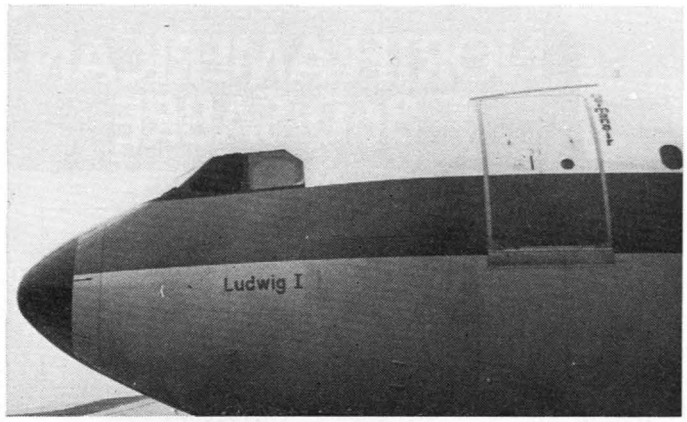
For up to date news and details of Airfix models get the Airfix magazine.

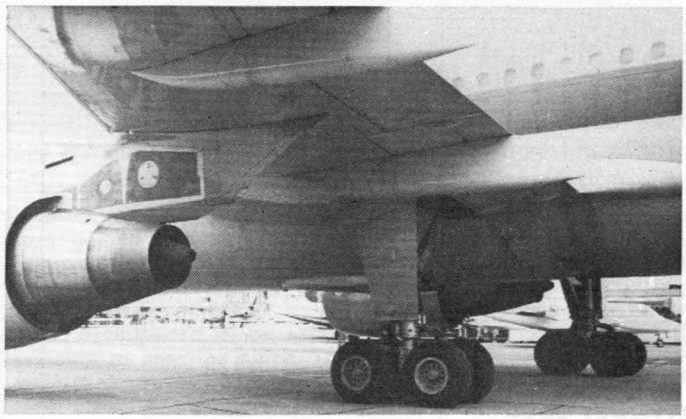
North American F-86D Sabre.
72nd Scale Series 2.
New to the world's biggest range of construction kits.

Technical Details	
Date of origin:	1949.
Engine:	7,650lb-thrust General Electric J47-33 with afterburner.
Top Speed:	693 m.p.h.
Service Ceiling:	49,600ft.
Combat Radius:	277 miles.
Wingspan:	37.1ft.
Length:	40.2ft.
Height:	15ft.
Armament:	24 "Mighty Mouse" 2.75 inch Folding Fin Aircraft rockets.

THE DOG WITH A MIGHTY MOUSE UNDER ITS NOSE.







Fellowships. These photos depict the markings of Germanair, as an alternative colour scheme for the 1:144 scale Airfix kit. *Peter F. Guiver.*

Top left *Nose detail on Germanair Airbus D-AMAY with name in medium blue. The fuselage doors have a light grey outline, with the three larger doors having a polished metal bottom sill and the airline title in medium blue vertically to the rear. The last two letters of the registration appears in black on the side-facing nosewheel doors. Germanair's other Airbus, D-AMAX, is entitled 'Maximilian'.* **Top right** *Airline title in medium blue above fuselage centre. Fuselage has white top with light grey undersides. Engine pod is polished metal.* **Above left** *Wing, undercarriage and engine pod detail on D-AMAY. Note dark grey areas on engine pylon.* **Above right** *Wing trailing edge and tail of D-AMAY. Fuselage cheat line and registration are medium blue. German flag above windows is black (top), red and yellow horizontal bands. Airbus title is in black with orange Airbus symbol. Fin is mainly red with white flashes* (Peter Guiver). **Below** *An FV 432 fitted with the 'Ranger' Scatterable Anti-Personnel Mine system* (MoD).

HMS Glasgow launched

HMS *GLASGOW,* the sixth of the Royal Navy's new Sheffield Class guided missile destroyers, was launched at the Neptune Shipyard of Swan Hunter Shipbuilders Ltd at Wallsend on April 14.

The 3,500-ton ship, 410 feet long, will be equipped with the Sea Dart ship-to-air/ship-to-ship missile system, a 114 mm gun, and a twin-engined anti-submarine Lynx helicopter.

The first ship of the class, HMS *Sheffield,* was commissioned last year. Four others, HMSs *Birmingham, Cardiff, Coventry* and *Newcastle,* have been launched and are at various stages of completion. A seventh, *HMS Exeter,* has recently been ordered.

HMS *Glasgow* is the eighth ship of the Royal Navy to bear the name. The first was commissioned in 1696. The last, a cruiser completed in 1937, was withdrawn from service in 1956 after seeing distinguished service in World War 2. *Paul E. Beaver.*

Third 'Bird'

HMS *PETEREL,* the third in a series of four Royal Navy patrol craft ordered from the Hessle shipyard of Richard Dunston Ltd, was launched on May 14.

The 190-ton vessel, 120 feet long, will be manned by a crew of four officers, four senior ratings and 16 junior ratings.

This group of vessels, known as the Bird Class, as they are all named after water birds, will undertake coastal patrol tasks, including fishery protection duties in home waters.

HMS *Peterel* — an 18th Century spelling

Continued on page 676

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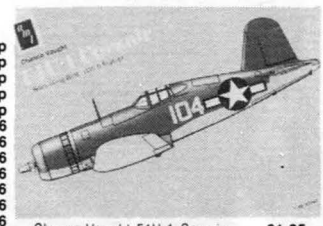

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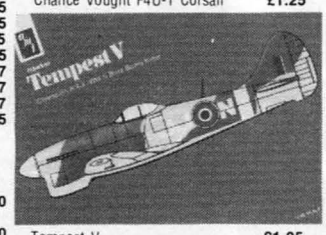

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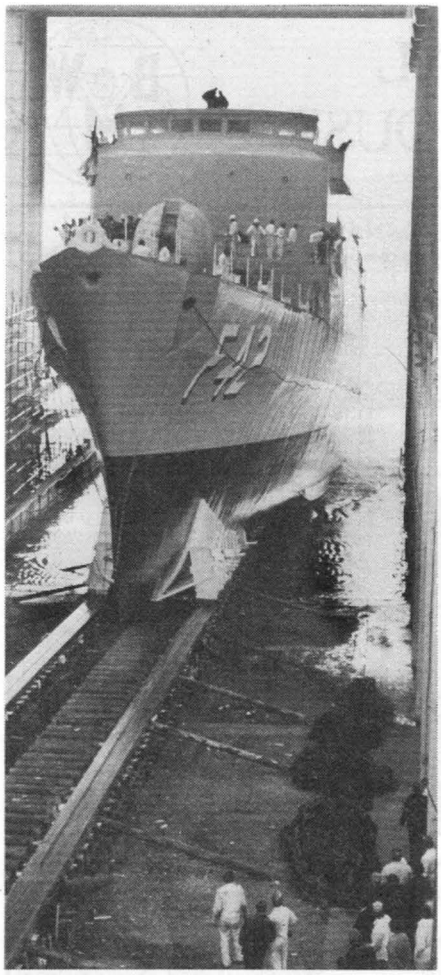


The launching of the Brazilian general purpose frigate Constituicao *at Woolston, Southampton, on April 15, the third of four Mk 10 frigates being built by Vosper Thorneycroft* (Vosper Thorneycroft via Paul Beaver).

— will be the seventh vessel to carry this name, the last being a 310-ton river gunboat built in the late 1920s by Yarrows which was eventually sunk by the Japanese in Shanghai in 1941. *Paul E. Beaver.*

Brazilian frigate launched

THE THIRD OF four Mk 10 Vosper-Thornycroft 3,500-ton frigates for the Brazilian Navy was launched at Woolston, Southampton, on April 15.

Named *Constituicao*, she is the heaviest warship to be launched at Woolston and possibly unique in that she was launched with her main armament of two 114 mm Vickers Mk 8 guns onboard.

Other vessels in the series for Brazil are: *Niteroi* (sea trials), *Defensora* (trials), and *Liberal* (building).

The covered berth left vacant by *Constituicao's* launch will, during May, begin to receive units of the hull of the Type 42 destroyer for the Royal Navy recently ordered from Vosper-Thornycroft. *Paul E. Beaver.* □

Write for Airfix Magazine! Contributions, preferably accompanied by photographs, of any topical aeronautical, military or naval subjects, are always welcomed by the editor. Contributions should be accompanied by return postage in case of unsuitability, and addressed to 'Air, land and sea' at the address on page 661.

British Army uniforms

1660-1900

Infantry jackets 1802-1815 by **Bryan Fosten**

THE INTRODUCTION of the short-waisted, long-skirted, double-breasted coats for officers, and the shorter skirted, single-breasted, closed coat for the rank and file, just before the end of the 18th Century, proved so successful it shortly led to the development of these garments into the more sophisticated and serviceable garments worn by British infantry during the Napoleonic Wars.

In 1802 the long-tailed full dress coats and the short-skirted jackets of the Light Infantry Corps were described as:

Scarlet cloth with long skirts (short for the Light Infantry) made to hook back and lined with white shalloon, buff for regiments with buff facings. The lapels, cuffs and the collars made of the facing colours of the regiments. This colour was ordered 'not to be varied'. The lapels were three inches wide and were made to button over the body down to the waist. The cuffs were made in the style called 'round'. They had no slits and were three inches broad. The coat had a standing collar about three inches high cut low in front and so as to stand away from the neck to facilitate the collared waistcoat, the shirt collar and the stock or neckerchief which were worn inside.

During the first few years the pockets were all cut on the 'cross', set just below the waist seam, although from the very early days, the élite Light Infantry had diagonal pockets. The coats had ten gilt or silvered regimental buttons to each lapel (officially including one on each collar front), four on each cuff, four on each pocket and a small special screwed button to retain the epaulette (two if a Field Officer). There were also two buttons on the hips, set on either side of the central back vent. Buttons were set on the lapels, cuffs and pockets either at equal distances, in pairs or in threes as regimental distinctions although in some cases officers had buttons arranged differently to their men.

Each of the skirts was turned back to reveal two long triangles of cassimere of the colour of the coat lining, the junctions decorated with either 'sycamore seed' embroidery, 'stars', 'hearts' or some regimental device. Regiments were either 'laced' or 'non-laced'. The former had rich gold or silver lace loops on the buttonholes of their lapels, cuffs, pocket flaps and on the collar. The letter had the buttonholes 'worked' in thick threadwork.

The regimental buttons on the Light Infantry jackets were smaller and usually domed. Officers of the grenadiers and the Light Infantry had padded scarlet cloth wings on both shoulders of the coats richly decorated with gold or silver lace and in some cases with bullion or fringes. Regulations permitted the Colonels of some regiments to specify that the scarlet side of the lapels was to be laced as well as the facing colour side. At court, levées, at balls, and formal drawing room occasions, the officers wore their full dress coats with the lapels buttoned back to reveal the varied facings. At other times they were worn closed over the body with the top three buttons left unbuttoned and folded back to reveal triangles of the facings. When the lapels were buttoned back the coats were hooked-and-eyed down the centre except in the tropics when they wore the coat hooked at the neck and falling open to reveal the waistcoat with the sash worn under it and over the waistcoat.

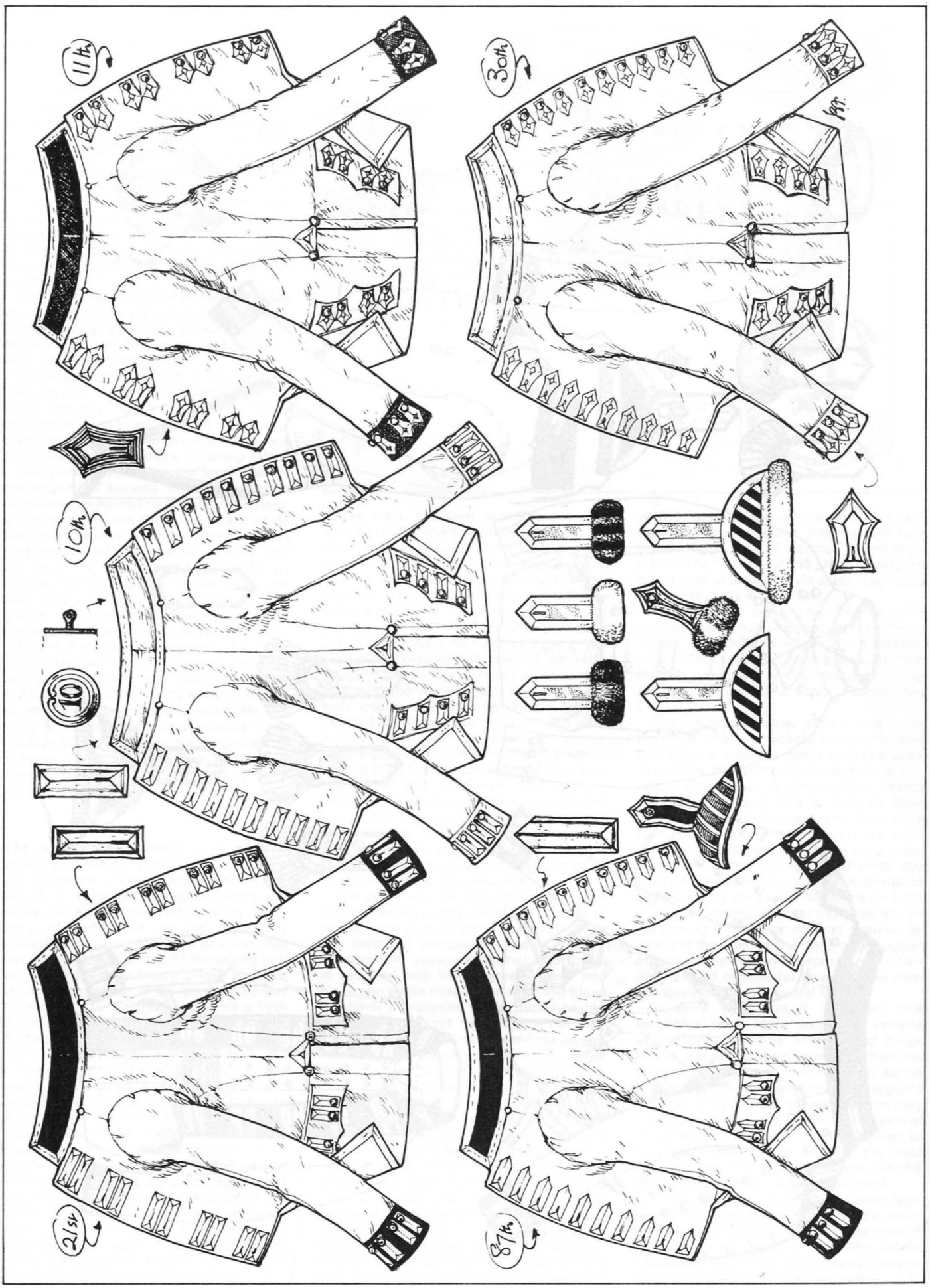
For the Highland Regiments the same description applies except that the skirts were shorter (because of the kilt) and the turnbacks were sewn down and false fronted with cassimere. Highland coats were ordered to have only eight buttons on the lapels and three on their diagonal pockets.

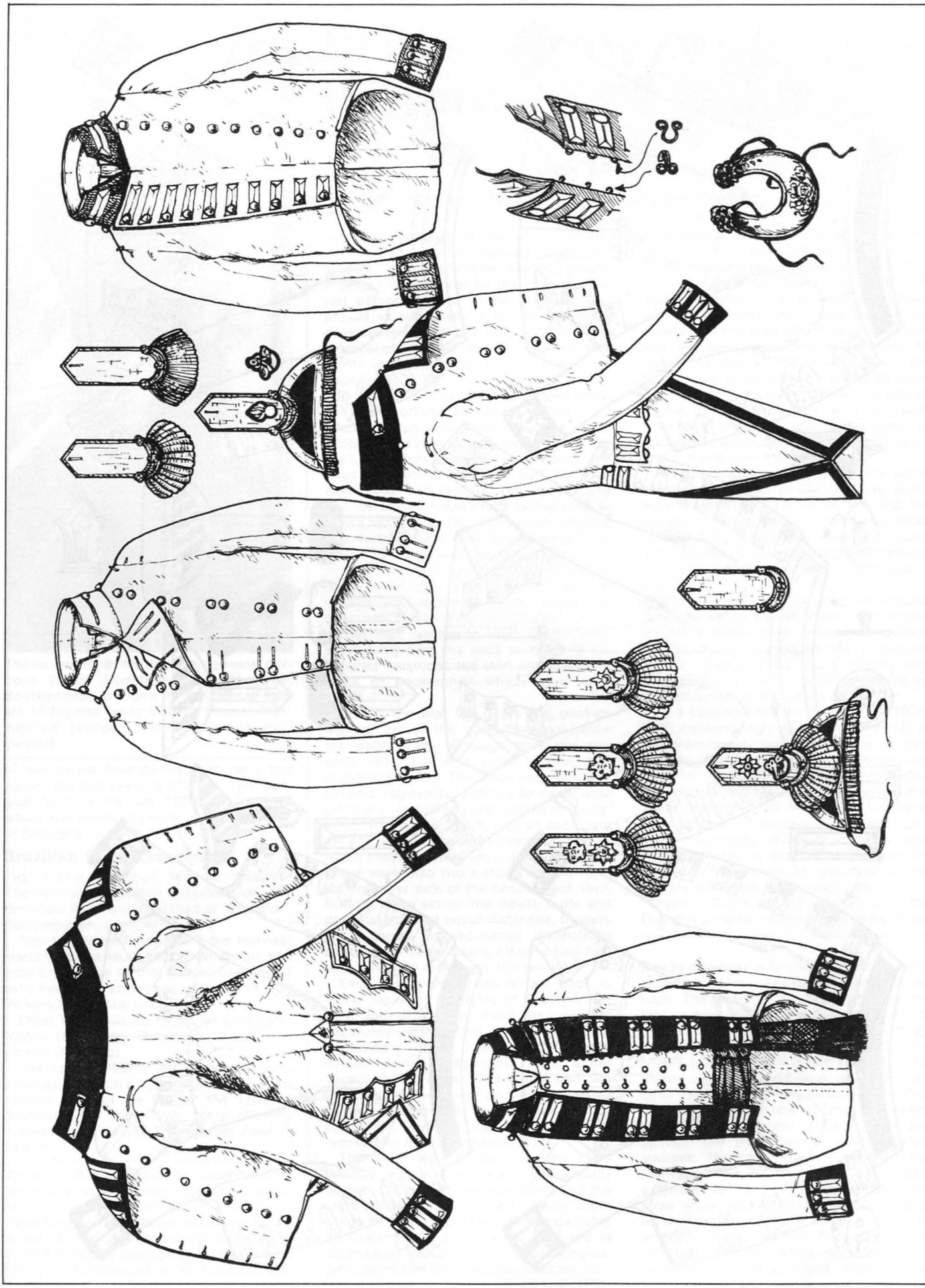
During the early years of the Peninsular Wars the Horse Guards came to acknowledge the convenience of the short-skirted jackets which had been worn for some time by the officers of the Light Infantry and sanctioned the use of similar garments by the remainder of the infantry.

As a consequence we find that, by 1809-1810, contemporary paintings and prints of the Peninsular battles indicate British infantry officers wearing jackets which had most of the detailing of the long-skirted coatees but with skirts which reached the lower level of their buttocks. The same rules applied concerning 'laced' and 'non-laced' regiments although in some regiments officers of even 'laced' regiments appear to have taken into use truly service jackets with plain lapels and cuffs.

Field officers of the infantry and the Fusiliers wore two bullion epaulettes. Field

Key to drawings *A selection of jackets with variations of lace arrangements and pocket flaps. The jacket of the 87th Foot (bottom left), is from an actual specimen. It differs from the popular conception of a jacket by having a wing with no fringe and with point ended lace. Hamilton Smith's chart, 1815 shows square ended lace in pairs with outer red stripe as the actual jacket. The wing has no inner row of lace. The wings and tufted shoulder straps (depicted centre), are from several authenticated sources. The coloured tufts are from the Peninsular period and may well have extended to 1815. The central shoulder strap showing a continuation of the lace across the base of the strap is from an actual jacket of the 26th Foot. The tuft in this case is red and white. Regimental buttons showed just as much inconsistency and many varieties exist.*


11th
30th
10th
21st
87th



officers of Fusiliers, Light Infantry and Light Infantry companies wore bullion epaulettes over wings. In full dress, Grenadier, Light Infantry and Fusilier officers wore epaulettes, although some portraits show them with wings. Adjutants and Quartermasters wore the epaulettes of Subaltern officers with fringe but, in addition, the Adjutant wore an epaulette strap and crescent part but without fringe on the left shoulder. Subalterns and Captains wore an epaulette on the right shoulder only, the latter with bullion and the former with fringe. Paymasters, Surgeons and Assistant Surgeons did not wear epaulettes or wings or the sash. Instead they had only a sword carried on a narrow, usually black, leather waist belt.

The straps of the Colonels had a 'Crown and a Star' besides any regimental device. Those of the Lt Colonel a 'Crown' only. The Majors had the 'Star'. Both badges worn with any regimental device.

Grenadier Officers had a flaming grenade on their epaulettes and wings and the Light Infantry had bugle-horns. These devices were in silver for gold laced regiments and in gold for those with silver lace and usually set on a piece of facing cloth.

The prime source for the lace, facings and spacing of buttons for the early period is the chart prepared by Charles de Bosset, a Lieutenant in the Swiss Regiment of de Meurin in the British service. The chart was prepared in 1803. For the period after 1812 we have the similar charts prepared by Charles Hamilton Smith. These charts are also invaluable for the information they give on the shape, style, spacing and striping of the rank and file white worsted lace.

By the Peninsular War period the loose fitted coats worn by the infantry since the turn of the century had become smarter and better fitting. The coats were described as red with facing colour collars, cuffs and shoulder straps. On the breasts white worsted lace loops and buttons arranged either at equal distance, two by two, or three by three. The collar was approximately three inches high, although some were higher and the cuffs approximately three inches deep. The coat usually had ten buttons and loops down the front, four on each cuff and four on each pocket flap, although in the case of regiments with loops in threes there were three on each cuff and only three on the pockets. The lace loops were about three and a half inches long at the neck but tapered slightly towards the waist. On some coats they were set on at a slant, upwards. The worsted lace was decorated with interwoven coloured stripes which assisted to identify the regiment and were folded with various designs, either square-ended, point-ended or in a peculiar form in the style of a pikehead called 'bastion'. The 45th Regiment had bastion-ended loops set on two's at one period and there were only eight loops down the front of their coats. Drummers, fifers and small men had jackets with a reduced number of loops down the front as there was no room to accommodate the usual number.

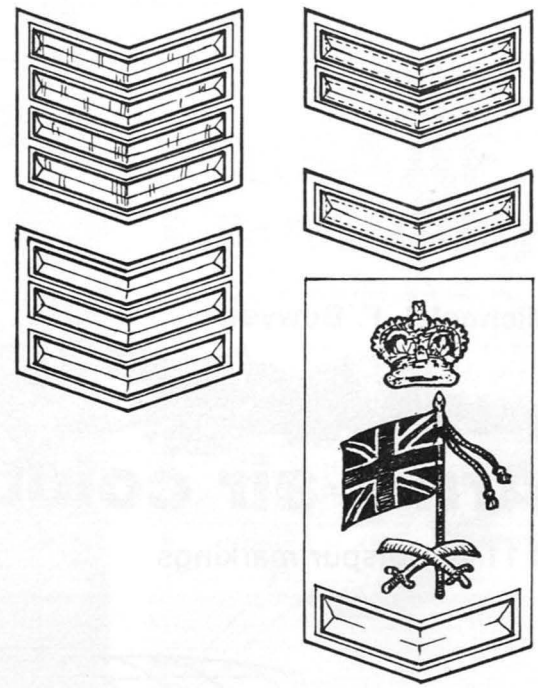
The collar and the shoulder straps were trimmed with a single row of the lace and in addition the ends of the shoulder straps of the battalion companies had a 'drawn' worsted tuft, usually white but also found in red, red and white, green, black and black and white mixed. The rank and file of the flank companies of the line had red cloth wings bound with regimental lace and six diagonal 'darts' of the lace across the shells. In some regiments the outer edges were further embellished with 'drawn' worsted thread in a fringe or tufting, usually white but also coloured for some regiments. At the back of the jacket there was a triangle of the lace sewn over the junction of the back seam and the waist seam. Some of the white kerseymere turnbacks were also trimmed with worsted lace. Originally only the battalion companies and the grenadiers had 'cross' pockets with scalloped flaps but later all companies seem to have taken the diagonal pockets of the light infantry companies into use. When they were diagonal the pockets opened towards the central vent. This vent itself was, on occasions, trimmed with lace but was also left undecorated. Some regiments seem to have had deep pleats on either side of the vent with small lace loops set horizontally within them.

Buttons were pewter, usually flat, with incised Arabic numerals set within either a raised, open-topped edging or a wreath. Some of the regiments with special Ancient Badges used these on their buttons, setting them above the numerals and sometimes behind them.

The Sergeant Majors wore a version of the rank and file jackets but sometimes with double breasted fronts with two rows of buttons, without loops in regimental distance. Others had single-breasted jackets with silver or gold lace to indicate their senior, non-commissioned rank. They wore four gold or silver chevrons on the right upper arm, each chevron sewn on a separate piece of the facing colour cloth and then on a patch of the red coat material. In Light Infantry they wore chevrons on both sleeves although no order has been traced confirming this. Sergeants had plain white lace and three white chevrons on the upper arm in the same way. Corporals wore two chevrons of regimental lace, chosen men one chevron or regimental lace.

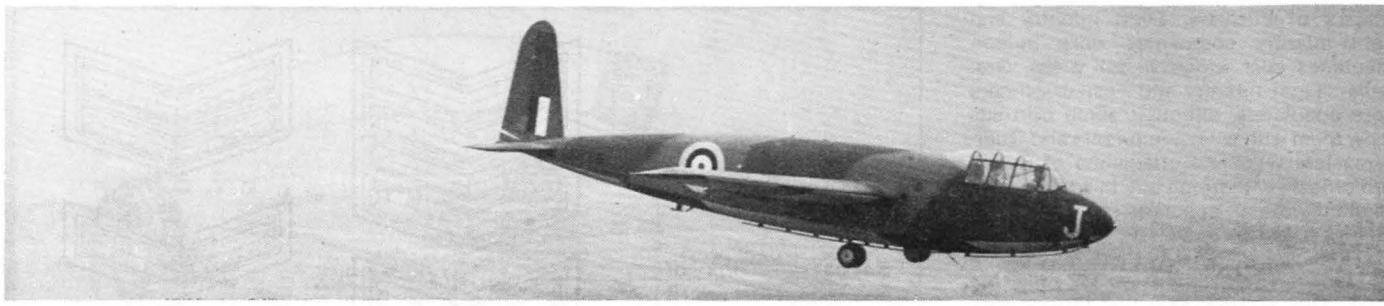
In some regiments it is known that sergeants wore stars and even crowns above their chevrons. In the 42nd Black Watch sergeants had inverted chevrons and the 2nd Foot had their chevrons set on in this way also. A painting of a Sergeant Major of the 2nd Foot shows him with only eight loops, two-by-two, down the breast of the jacket. All the other detail is known to be correct and it seems odd that the artist should have made this distinction. (Maybe the Sergeant Major was a short man).

It has not been possible to cover regimental idiosyncracies in the space available here but the illustrations cover most of the general variations known. The details have been taken from actual specimens or photographs in private collections. □



Badges of rank of NCOs. Top left, Sergeant Major, under this Sergeant. Top right, Corporal then Chosen Man. Below is a Colour Sergeant. The shape of the red cloth patch is not known.

Key to drawings *A selection of officers' jackets and the full dress coatee. The top left illustration shows a typical jacket displayed. In some regiments the lapels and pocket flaps were piped white. Many variations of decoration of the turnbacks existed. Sometimes the gold or silver lace was laid on top of a strip of the facing colour, sometimes the facing colour was laid on top of the lace as in the full dress coatee (bottom right) of the 11th Foot. This is from Hawkes pattern book. Other variations are described in the text. The epaulettes (top right) are of a Captain and Lieutenant with a flank company wing under. Below, centre, are the epaulettes of a Colonel, Lieutenant Colonel and Major. Below these is the wing of a Field Officer of a Light Infantry Regiment. Also shown is the epaulette worn on the left shoulder of an Adjutant, the normal fringed epaulette was worn on the right. On the extreme right is a typical gorget of the period. Above this is a sketch of the hooks and eyes which were used to fasten the jacket when the lapels were buttoned back. The design of the hooks and eyes is exactly the same as those used by modern dressmakers.*

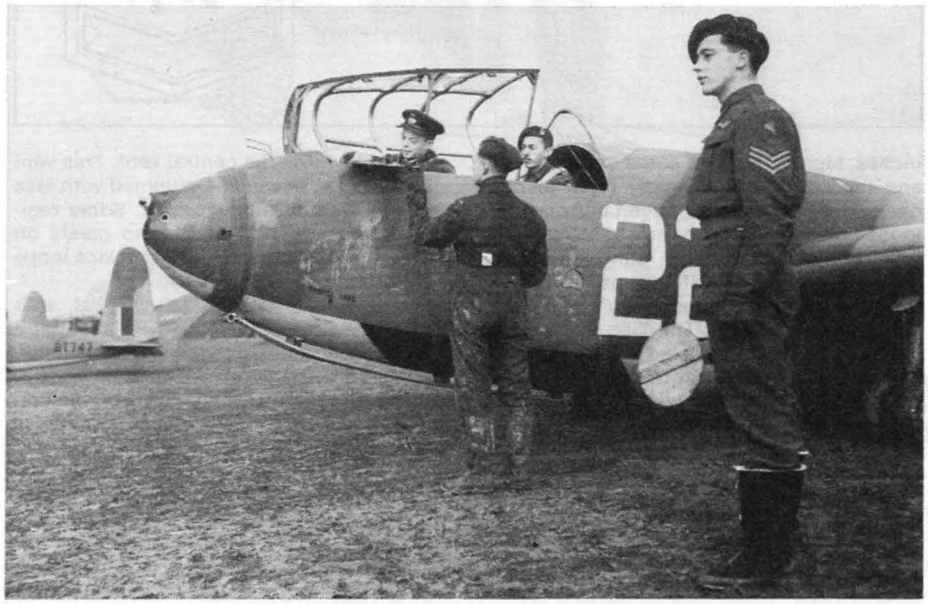


Michael J. F. Bowyer

Army-air colours 1937-45

Part 11 — Hotspur markings

IT WAS AGREED in mid-March 1941 that the upper surfaces of all gliders would be Dark Green-Dark Earth. 'Sporting type' gliders in the Glider Training Squadron presently had yellow under surfaces, but already the idea had been mooted of applying black diagonal stripes after the manner of those on target towing aircraft which rendered these more obvious. At this time, however, the under surface colours were uncertain for it was not yet known in which theatre gliders would first operate. In the case of training gliders, however, it was decided that the first 100 Hotspurs would have black/yellow striped under surfaces provisionally Sky. It was argued that it would be easy to make the black/yellow under surfaces all black if needed. Thus, production Hotspurs were completed with black/yellow striped under surfaces



Top of page *BT615 'J' of 2 GTS being towed. A 'windsock' (not visible) was attached to the cable to bring it to earth more slowly and render its presence obvious to other aircraft* (IWM). **Left** *'22' of 3 GTS in 1943, showing the number identity which superceded letters. The RAF instructor is signing the Form 700 and the army pilot sits behind. In the foreground is a sergeant of Airborne Forces. BT747 is poking into the picture* (IWM). **Below** *Hotspur II BT551 'L' of 2 GTS 29.1.42 until damaged beyond repair in a flying accident on 20.8.42. Note extended belly skid. 'N' has the old type skid. Neither aircraft has a radio mast* (IWM).

although some early Mk 1s retained all yellow under sides well into 1942.

On the production Hotspurs, mostly striped from the outset, the fuselage roundels were Type A1, wing roundels Type B and under wing roundels Type A, altered in style when the narrow white rings were introduced. Black serials were applied only on the rear fuselage.

Individual identity first took the form of a Sky or white letter on the glider's nose. When the GTSs expanded to having more than 30 or so gliders on strength the letter was replaced by a number. After the war when units declined in strength and letters became a standard feature on trainers, there was a reversal to letters.

It was almost impossible to identify wartime training units by their markings, although in the case of all second line units the presentation and shape of letters and numbers was sometimes individualistic, likewise the positioning. Thin strokes, bold strokes, fanciful shapes, all were to be seen. This made unit identity sometimes possible.

No 1 GTS lettered its aircraft in 1941-42, placing the Sky letter on the nose as on BT990:S (period of use mid-1942-March 1943). After the move to Croughton numbers came into use, and were retained until 1945.

No 2 GTS used only letters as on BT551:L (January 1942-August 1942), BT567:N (January 1942-July 1942) and BT600:I (January 1942-December 1942).

No 3 GTS, which existed from July 1942 to December 1947, reflected the changes in individual markings. Initially it used letters as on BT605:D (December 1941-June 1942). Circa July 1943 it changed to using numbers usually painted in Sky and placed on the glider's nose as on BT843:4 (June 1942-July 1944), HH448:22 (October 1944-May 1945) and BT573:41 (September 1944-April 1945).

In April 1945 the Hotspurs in use included BT751:26, BT680:21, HH754:59 and by July at Wellesbourne Mountford letters were reappearing as on HH754:N and HH313:R. HH958 was now 59, HH431:9. Examples of gliders used by 3 GTS postwar include BT823:I (December 1943-December 1947, HH313:R (July 1945-December 1947) and HH190:P (April 1945-December 1947). By early 1947 these numbers were black and were applied on a yellow rectangle on the sides of the nose.

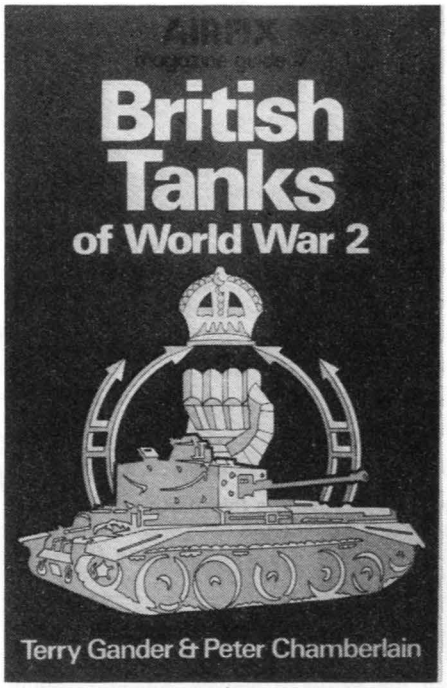
In keeping with other trainers, Hotspurs acquired yellow upper wing tips about March 1944 and retained them in most cases to the end of their service lives. Examples of 3 GTS Hotspurs marked with the extreme four feet of their wing tips in yellow and used in 1947 were HH120:U, HH529:C and HH773:L, all of which were eventually burnt in the summer of 1948 at Wellesbourne. These machines had black underwing serials applied on yellow rectangles. From mid-1944 they had worn a yellow band around the fuselage centred on the roundel.

No 4 GTS initially used letters on the glider noses, but from late summer 1942 the unit's gliders carried numbers like 90 on HH255.

No 5 GTS initially carried letters, eg BT542:N (January 1943-May 1945) but from

Continued on page 682

More 'army-air' colours



Airfix Magazine Guide 17

British Tanks of World War 2

by Terry Gander and Peter Chamberlain

THE LONG-AWAITED sequel to Airfix Magazine Guide 8 *German Tanks of World War 2*, traces the development of all British tanks of the last war, from the diminutive Light Tanks through the famous Crusader and Cromwell to the heavy Matilda and Churchill. Included are numerous photographs, 1:76 scale plans, data tables, notes on camouflage and markings, and a chapter on British tank armament. A 'must' for all AFV enthusiasts and modellers.

Airfix Magazine Guide 18

USAAF Camouflage of World War 2

by Jerry Scutts

A CONCISE guide to the markings carried by USAAF fighters, bombers and other types throughout the last war. Lavishly illustrated with photographs and drawings, this book provides detailed information on markings down to squadron level for all the US Air Forces, including basic colour and camouflage schemes, national insignia and mission markings. An invaluable reference book for every aviation enthusiast and modeller.

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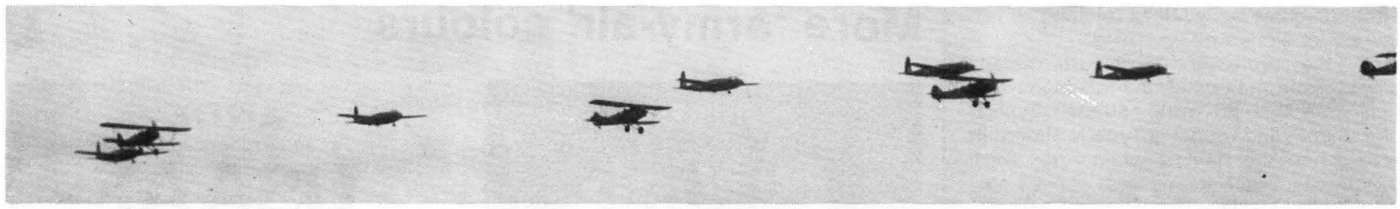


Top of page *An impressive formation of Hectors towing Hotspurs* (IWM). **Above** *A general view of Hotspurs and Audaxes at 2 GTS in August 1942. The gliders have individual letters, the tugs have numbers ahead of the roundels (eg '10')* (IWM). **Foot of page** *BT551 on landing approach, showing the under surface stripes* (IWM).

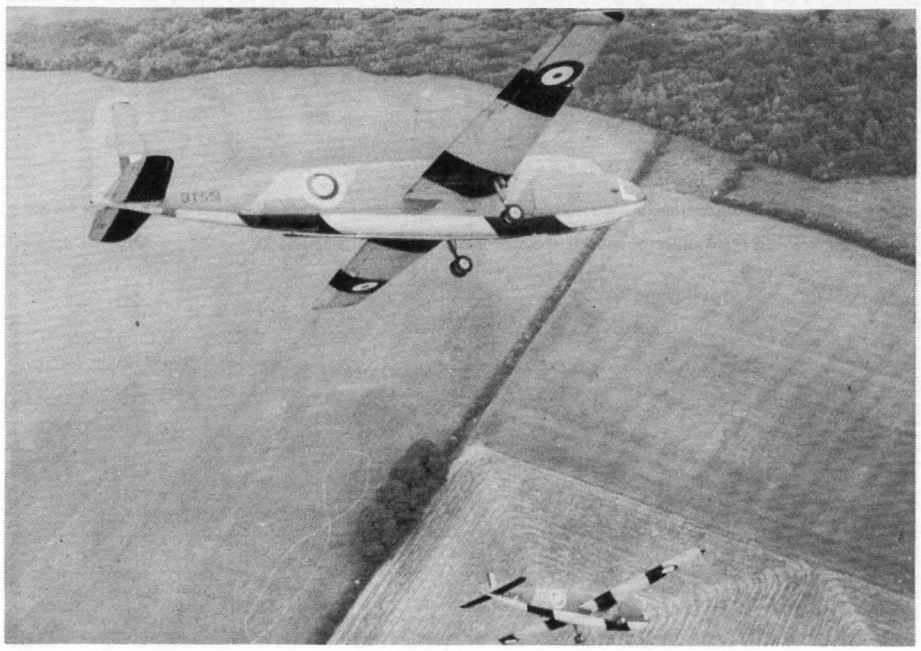
late 1942 the unit was using Sky numbers as on HH585:62 (September 1942-May 1945), BT722:44 (October 1944-December 1944), HH374:20 (January to December 1945). 5 GTS disbanded before the full change over to letters once more although some of its Hotspurs like HH455:U received them. By autumn 1945 individual numbers were pale blue and placed immediately aft of the glider's wing trailing edge as on Mk III HH609 which carried '25'. This machine had yellow wing tips and the fuselage band.

Both the Glider OTUs relied upon letters for identity and the GPEU first had letters then numbers, a lettered machine being BT671:K used August-September 1942. Hotspurs of 296 Squadron had a red individual letter aft of the fuselage roundel.

A handful of Hotspurs survived long enough to acquire an overall yellow finish with black under surface stripes like HH130 which carried A in black on its nose and FCVP aft of the roundels during 1946-47.

Glider tugs were ordered to have standard training aircraft camouflage and markings, although few if any ever wore underwing serials until after the war. Some of the earlier examples, including some Hectors, Audaxes and even Masters somehow acquired black underside stripes, but these had been removed by 1943. Individual identity markings on Hectors seem usually to have comprised a number-letter combination, eg 5G, ahead of the roundel, but quite a number of tugs in the early days had no identity lettering.

The Master IIs introduced in summer 1942 had markings reflecting the systems used on the gliders. Initially they carried Sky or white letters, DM358 having a Sky K ahead of its fuselage roundels. Then came number identity, the individual identity being sited ahead of the roundels. DL369 used by 3 GTS after the war (June 1945-October 1946) carried 74 in Sky. Others of the unit similarly marked were DL473:29, DL427:32 and DL565:21. A Master GT II DM331 of 5 GTS in use in September 1945 had '21' ahead of the roundel in pale blue.



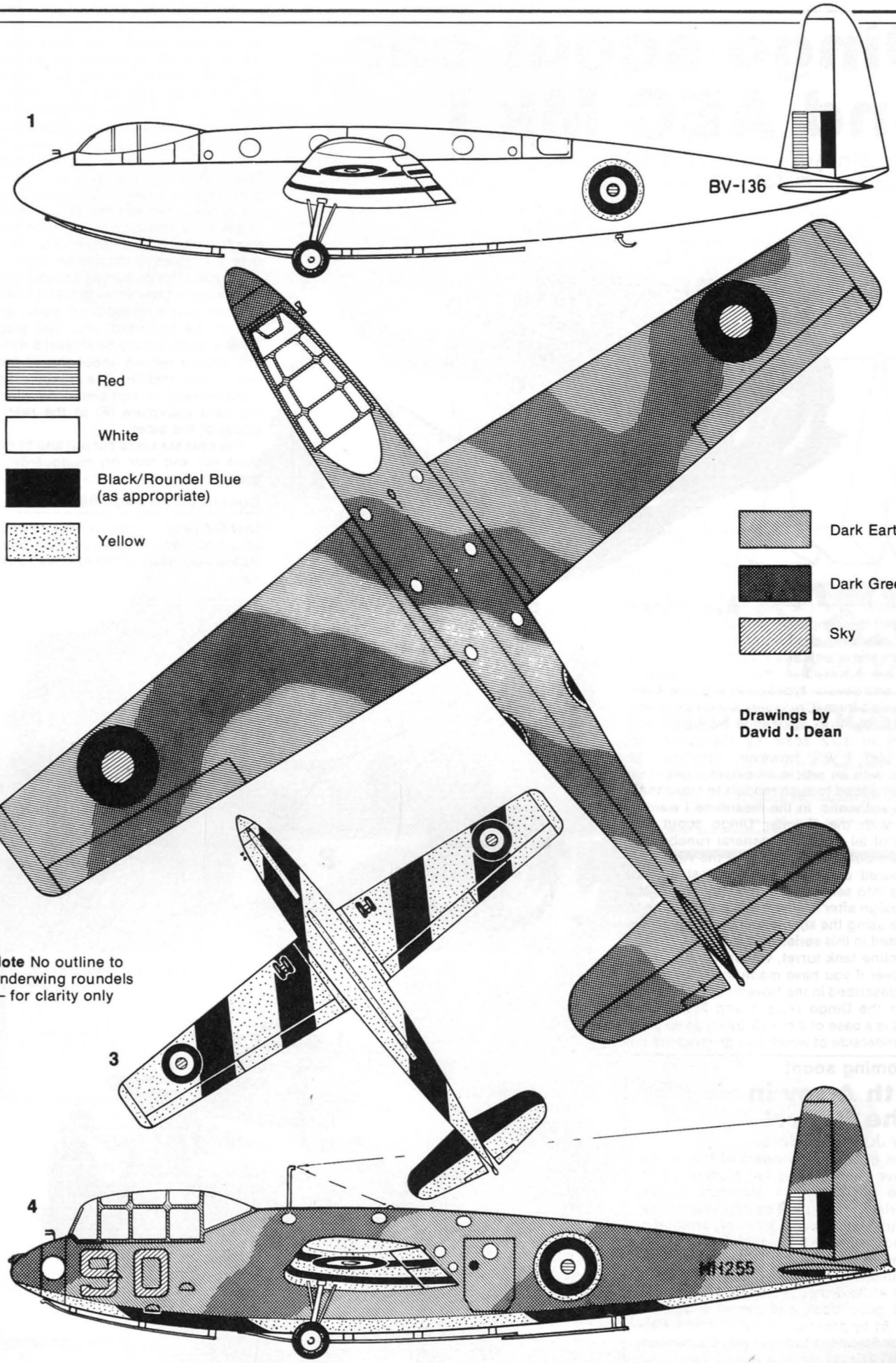
Note *The following section of text should have appeared in last month's article just before the last paragraph of main text. We apologise to all readers for this omission.* **Ed.**

On September 3 1943 534 Hotspurs were held in storage. To have modified them all to Mk III standard would, it was said, have been 'a prodigal waste of time'. The issue rate to units was slow. About a quarter in store had been modified in various ways, yet very few incorporated all the modifications which produced the Mk III. At this time 112 Hotspurs were flying with Flying Training Command.

In mid-September 1943 it was decided to reduce the modification programme and it was suggested that 200 aircraft in store should always be available fully modified to answer the attrition rate of 12 per month.

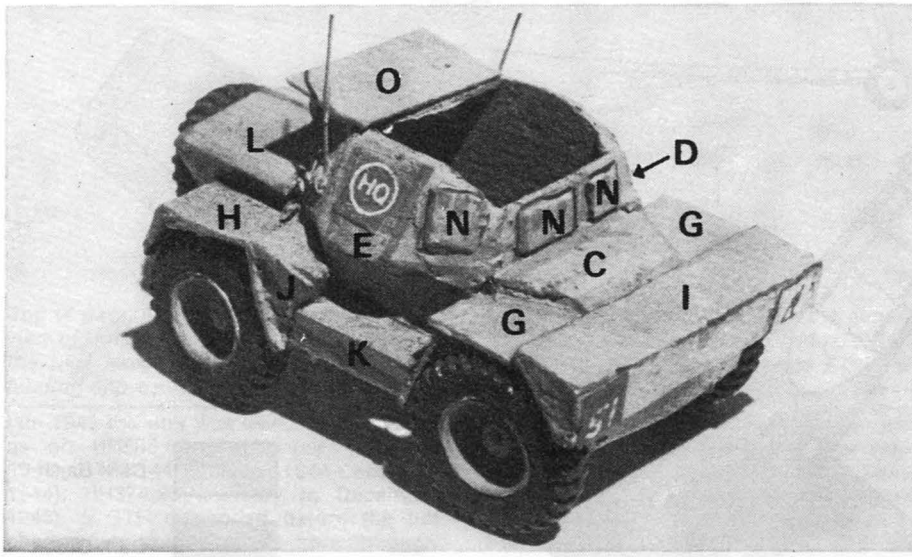
An attempt was now made to rationalise the programme which had produced a variety of Hotspur variants and very few fully modified Mk IIIs. The first 28 production aircraft already had their flaps increased in area and the first 29 already had cockpit hood jettisoning, the only aircraft needing such modification. Early aircraft needed the Fairlead undercarriage release and aerodynamically balanced ailerons were fitted now to most aircraft, likewise nose towing gear. Tailplane incidence had been increased on many aircraft. Modification No 172A/B concerned the fitting of tail bracing, but few aircraft ever had this although Flying Training Command considered it essential. For regular flying the belly skid was lengthened on a large number of Hotspurs, the tail skid thereby being removed. The variety of modifications produced what was called the 'standard Hotspur' and few were ever to the 'fully Modified' Hotspur standard. □

Key to drawings. 1 *Hotspur I BV-136 can be seen to have a much different canopy from that of the production aircraft. The top of the fuselage could be lifted to permit rapid exit. Finish was standard glider trainer style.* **2** *Plan view of a Mk II showing camouflage pattern generally applicable to Hotspurs.* **3** *Under side view of the Hotspur II/III showing the style of striping. Post-war aircraft (some yellow on their sides and upper surfaces) in some cases carried black serials on their under surfaces on yellow rectangles.* **4** *Hotspur II HH255 in the markings of 4 GTS, as carried in August 1942. The fuselage roundel has partly been changed to Type C1, others have yet to be brought into line with C-type roundels. Note the extended belly skid, making the machine one of many interim types not fully converted to Mk III standard. HH255 was initially delivered to 15 MU 17.6.42. It passed to 101 (Glider) OTU 3.7.42, to 4 GTS 8.8.42, General Aircraft 26.8.42, 4 GTS 18.9.42, 5 GTS 30.7.44, and was struck off charge on a major repair on 21.11.45.*


1
BV-136
Red
White
Black/Roundel Blue
(as appropriate)
Yellow
Dark Earth
Dark Green
Sky
Drawings by
David J. Dean
Note No outline to
underwing roundels
— for clarity only
3
4
MI255

Dingo scout car and AEC Mk I

More 8th Army models in 1:76 scale described by **John Sandars**



WE HAVE, over the last couple of years, covered the simple construction of various men, weapons and vehicles used in the Desert. I have deliberately omitted tanks, as they are covered in many other publications and several types used are now available in kit form (Crusader, Sherman, Grant, Matilda by Airfix, Valentine by Fujimi, and Stuart in 1:72 scale by Hasegawa, for example). I will, however, conclude the series with an article on external gear that can be added to such models to make them more authentic. In the meantime I want to deal with the Daimler Dingo scout car, maid of all work and general runabout in the armoured divisions, and the AEC Mk I armoured car. Although this last did not come into service until the very end of the campaign after Alamein it is an easy one to make using the simple techniques we have adopted in this series, and it makes use of a Valentine tank turret, which you may have left over if you have made the 'Bishop' SP gun described in the November 1975 issue.

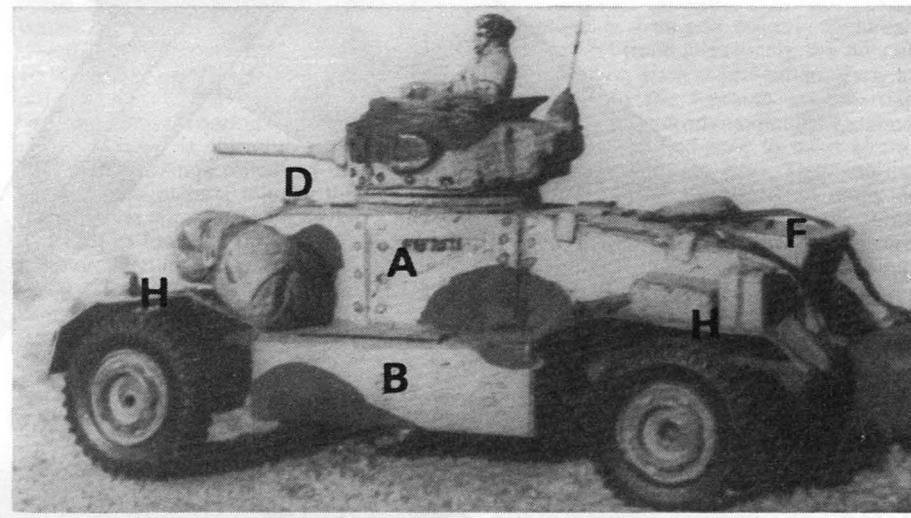
For the Dingo (Figs 1 and 2) the start point is a base of 2 mm (3/32 in) balsa (A) in the underside of which two grooves are cut to take cocktail stick axles with 6 mm (7/16 in) diameter wheels from the spares box. On top of this base the engine (B) and front body (C), which are cut from balsa, are stuck and the bulkhead (D), from card, is itself stuck to the back of the front body.

Next the sides (E) are added. These are the most difficult part of the whole model, with their complicated shape of flat plates. They can be made up from card but for our purposes it is easier to cut out two rectangles of balsa that can be glued to each side of the base and go up each side between the front body and the engine, to which they are glued at front and back. These sides can then be carved roughly to shape and sanded down so as to blend in with the tapered shape of the front body, and the top of the bulkhead, etc. The pieces of balsa should initially be at least 5 mm thick, and should remain about this at the midline in the middle. The box-like fighting compartment is completed by gluing on the card backplate (F) to the rear upper edges of the sides.

The next step is to cut out and fit the card front (G) and rear (H) mudguards. These are partially held in place by balsa stowage

Continued on page 686

Left *Dingo scout car. Letters on photo are keyed to text and diagrams on page 686.* **Below** *Two views of the AEC Mk I armoured car.*



Coming soon!

8th Army in the Desert

by John Sandars

THE BOOK ALL followers of this series have been waiting for! Number 20 in the popular *Airfix Magazine Guide* series of books will be available before Christmas. Covers infantry, armoured and other units, with dozens of photos, diagrams, colour scheme notes, etc. A logical companion to No 12 *Afrika Korps*. Price £1.40 net from all good book and model shops, or £1.61 by post from the publishers, Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL.

M3A2

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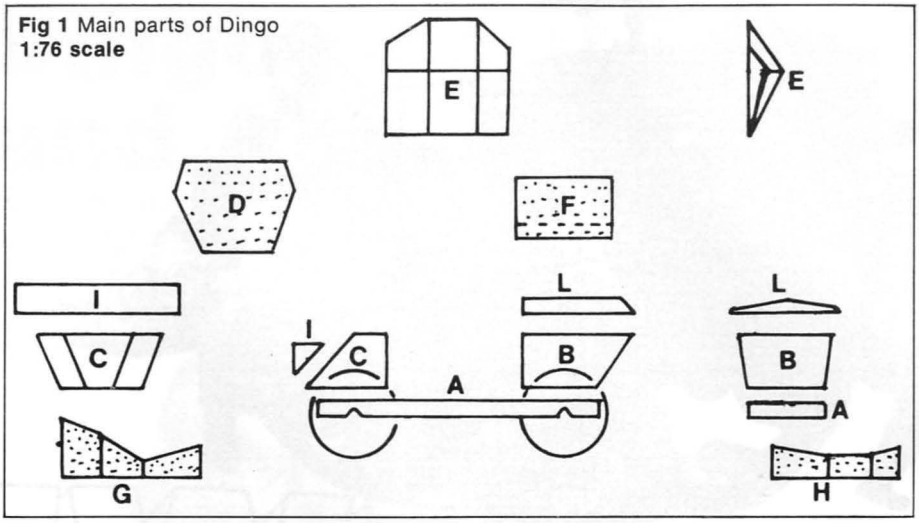


Fig 1 Main parts of Dingo
1:76 scale

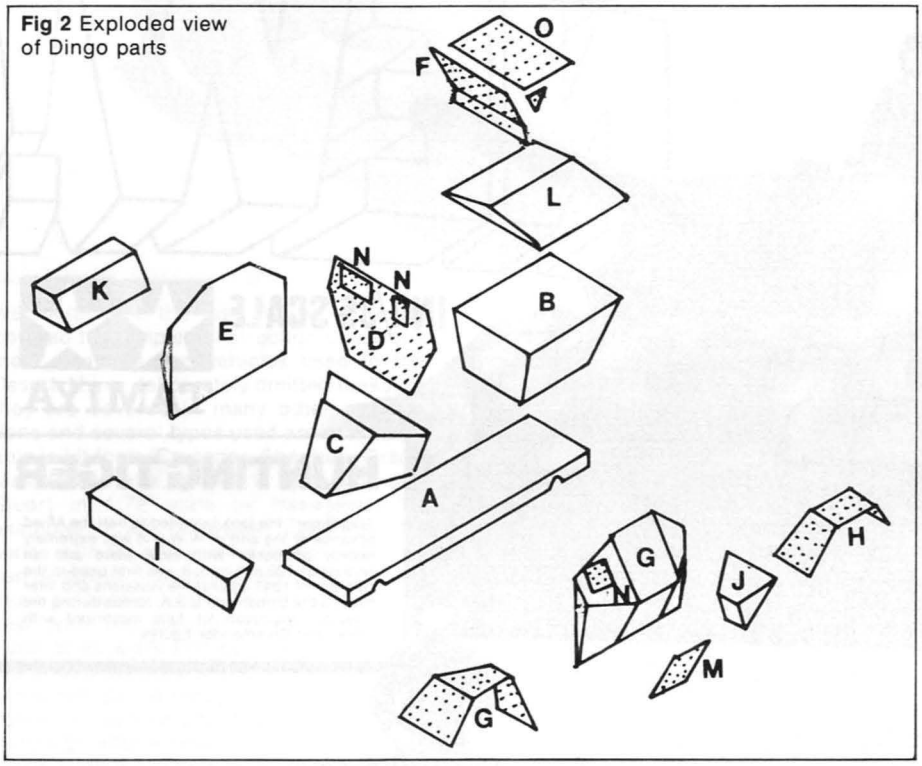


Fig 2 Exploded view of Dingo parts

boxes; (I) across the front of the vehicle, the two (J) in front of each rear mudguard, and (K) between the front mudguard and the box (J) on the right hand side. All these can have card lids cut out and fitted on top.

The engine cover (L), sloping down at each side from the centre, and sharply at the rear, is next glued on and then the folding roof (O), cut from card and supported by triangles of card fixed to the backplate (F). Finally the door (M) from card is stuck to the lower central section of the left hand side; and flaps (N), two on the top of the bulkhead, and one on the front section of each sidepiece, are added. Bristle aerials and a spare wheel can be added.

The Dingo is difficult to get just right in a simple model of this sort and you may well need to make judicious use of modelling putty around the lower side pieces and stowage boxes to make it look right.

The AEC (Fig 3) is simpler. Assuming you have a 1:76 scale Valentine tank turret ex-kit, the model consists basically of an upper (A) and lower (B) body cut from 9 mm (3/8 in) balsa. The lower body has grooves cut and two cocktail stick axles, with 16 mm (5/8 in) diameter wheels from spares, are glued into them.

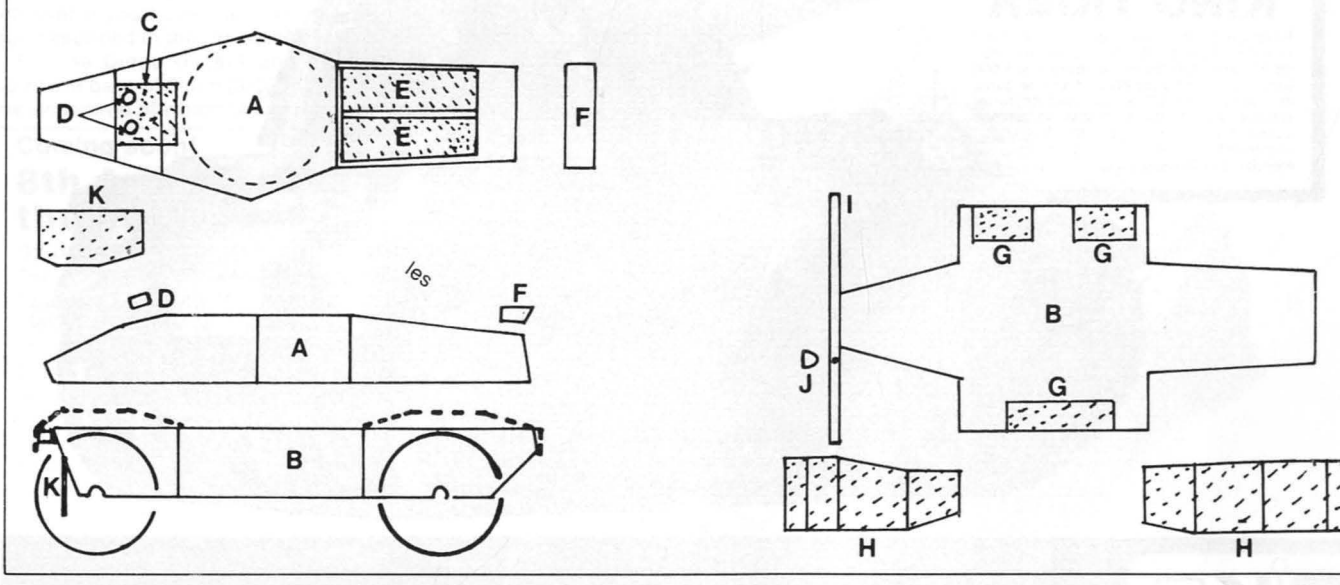
The driver's hatch (C), from thin card, is glued to the top front, with two cocktail stick periscopes (D) on it, and the engine covers (E) go behind the turret space, with the vent (F) from balsa at the rear of the hull.

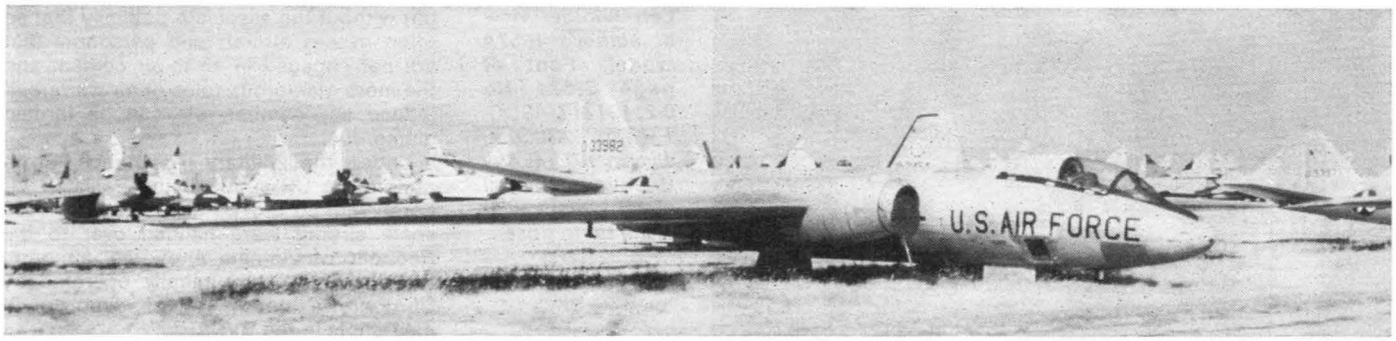
When the two halves of the hull have been glued together the stowage box lids (G) can be added and the mudguards (H) cut out. These are attached to each end of the stowage boxes on the lower hull and bent as shown on the dotted lines, a strip of 2 mm (1/16 in) balsa being used to hold the front ones in position. A headlamp (J) from cocktail stick goes on this bar just inside the right mudguard.

Finally the plate (K) from card is glued to the front of the lower hull, and the Valentine turret (not shown in Fig 3) is fitted. The one shown in the photographs is in fact scratch-built, but a kit one will save time.

The final article in this series will, as mentioned, concentrate on the various extras that can be added to vehicle models to make them look more realistic. □

Fig 3 AEC Mk I construction **1:76 scale**





B-57 A to D

More Canberra conversions from **Bryan Philpott**

IN THE FEBRUARY 1976 edition of *Airfix Magazine* I described a major conversion featuring the General Dynamics RB-57F using parts from the popular Airfix Canberra kite. In that article I mentioned that this aircraft was the ultimate in Canberra conversions and promised to take a closer look at some of its predecessors manufactured by the Glenn L. Martin Company and used by the United States Air Force. The result of that promise is the following article which covers the work involved in producing three more Canberra variants.

Although it is over 27 years since the prototype English Electric — as it was then — Canberra first flew, it is still in front line service today and is much sought after by smaller air forces. At the BAC works at Samlesbury work is continuing on the refurbishing of Canberras and it seems likely that the Canberra will go on for at least another ten years, thus giving Samlesbury a unique distinction of having had one or another version of this original 'Multi-Role Combat Aircraft' on their premises at all times over a 35 year period.

In the RAF the MRCA Tornado is scheduled to take over many of the tasks formerly carried out by the Canberra so it is not really surprising that an unknown 'wag' using typical British wit, hinted that the letters MRCA really stand for 'Must Refurbish the Canberra Again'!

On a more serious note, the money that this aircraft has earned Great Britain in terms of export valuation, runs into several million pounds and first indications of its overseas earning potential became evident in 1951 when the design was chosen by the Americans for manufacture under licence, initially as a night intruder replacement for the ageing B-26. At this time the aircraft was the only foreign design selected for use by the USAF since the end of World War 2, although it has now, of course, been joined by the Hawker Siddeley Harrier.

The fourth production B2, serial WD932, was loaned to the USAF from February 20 1951 and flew to Gander in 4 hours 40 mins the following day. On March 5 it was handed to the Glenn Martin Company as a pattern aircraft but flown by them in performance and evaluation trials for several months before it was returned to the care of the USAF where it was assigned the serial number 51-17387, although there seems to be considerable doubt as to whether it ever carried this number. On December 21 WD932 broke up in flight during a tight turn, the pilot parachuted to safety but unfortunately his crew man died as a result of a malfunction in his safety equipment.

Four months prior to this tragic accident, a second pattern aircraft, WD940, had been flown from Aldergrove to Gander in 4 hours 18 minutes by Roland Beaumont, and this was handed over to Martin on September 4 1951. Prior to this the American company had sent a team of engineers to the English Electric factory to study production techniques and methods. This team returned to the USA and set about planning the production of the Martin-built aircraft using WD940 for this purpose. This aircraft was used extensively for flight testing during which the proposed underwing pylons for the B-57, as the aircraft had now been designated, were fitted and later it was modified to accept the new tandem seat canopy that was to be fitted to the B-57B.

During its time in the States WD940 retained the current RAF bomber camouflage of the period which was light grey upper surfaces and black under surfaces, the USAF serial assigned was 51-17352.

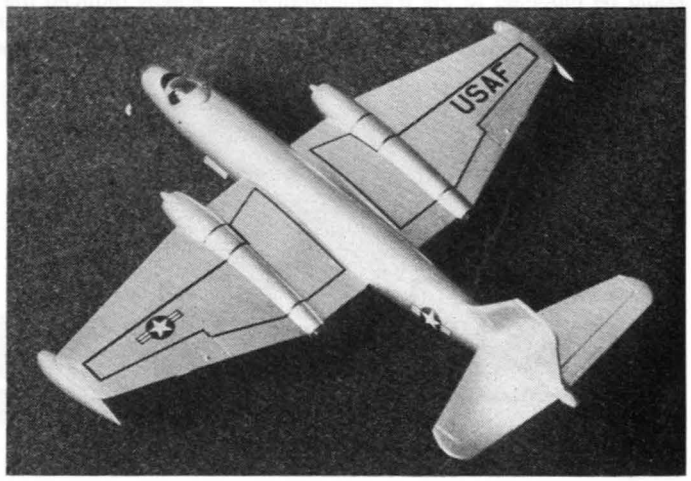
The first of a pre-production batch of eight B-57As, which were cleaned-up versions of the B-2 powered by the American-built version of the Sapphire engine, the Wright J-65, first flew on July 20 1953 carrying the serial 52-1418. Externally the B-57A seemed to differ very little from the original B-2, but there were, in fact, many changes, most of which would not be reflected in 1:72 scale conversion. The Martin engineers completely redesigned the cockpit layout replacing the apparently cluttered British interior with a much more functional layout, they also paid a lot of attention to sealing between panel lines and this, with other aerodynamic refinements, increased the aircraft's speed by about five knots. This does not indicate that the British designers had been lax, but American engineering methods were different to those used in this country so certain components had to be fabricated in different ways, resulting in the same end result but with slightly different component parts.

The B-57 had an air conditioned cockpit and the hand operated brakes were replaced by toe operated types, while the normal three-man British crew was changed to a two crew layout.

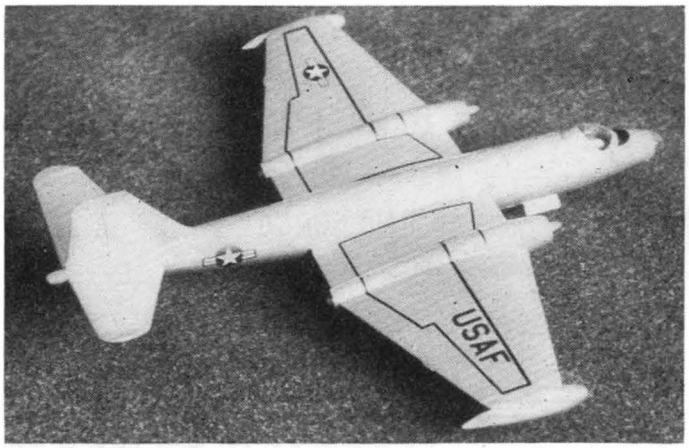
The two most significant changes were the addition of armament and a rotary bomb bay. The British Canberra was an unarmed bomber but the B-57, whose design task was for intruder operations, was fitted with forward-firing guns in the outer wing panels which were also strengthened for the installation of weapon-carrying pylons.

The rotary bomb bay was designed by Martin engineers and used a pre-loaded bomb door which rotated to release the weapons, when fully rotated the door effectively sealed the bomb bay thus reducing the buffeting that occurred when the normal hinged doors were opened.

In addition to the two original British built aircraft, which were also designated B-57A, a further eight 'A' models were



Top of page *EB-57D No 0-33982 at MASDC, Tucson, Arizona, in 1971* (Larry Buettner). *Aircraft is natural metal overall with yellow fin/tail area and yellow patch at front of cockpit, white rear cockpit area and red patch under nose.* **Right** *Author's model of B-57A.*



Left *Another view of author's B-57A model.* **Foot of page** *B-57A No 0-21484 at MASDC, Tucson, Arizona, also in 1971* (Larry Buettner). *Natural metal overall with white tip to nose.*

manufactured after which a total of 67 RB-57As were produced. These were similar in airframe shape but had a camera installed aft of the bomb bay and were used for the reconnaissance as well as intruder roles. This version of the aircraft entered service with the USAF in March 1954 when the 363rd Tactical Reconnaissance Wing of the Tactical Air Command received them as replacements for its Douglas B-26 Invaders.

The next version produced by Martin was the B-57B for which an initial contract of 102 aircraft was issued. A second contract for a further 191 was originated later but this was reduced to 100, the other airframes being modified to C, E, and RB-57D versions.

The B-57B underwent several changes, the most noticeable of which was a complete redesign of the nose section in which the two-man crew was housed under a single clam-type canopy. The prototype B, 52-1493, made its maiden flight on June 28 1954 and the mark entered service in January 1955.

In addition to the new canopy the aircraft was fitted with two triangular-shaped airbrakes located in the rear fuselage which augmented the finger type brakes fitted to the top and lower surfaces of the wings. The aircraft was armed with eight .50 calibre machine-guns up to the 91st aircraft, after which they were changed to four 20 mm M-39 cannon. In addition to this armament the B also carried underwing pylons which could carry rockets, bombs and the new cluster weapons then being developed.

The B-57C was basically a B model but fitted with dual controls for the training role. 38 of this version were built and they could be modified to the B configuration when required. The E, which could be converted to a B or C, was dual-controlled and carried equipment for target towing. As the RB-57E it was used in the tactical bomber-reconnaissance role, and as the TB-57E for transition training, a total of 68 were manufactured. 20 of the originally ordered B-57B airframes were used to produce the RB-57D which was the forerunner of the RB-57F described in February.

The RB-57D was the first version in which the basic Canberra plan form was dramatically changed, the 63 ft 11½ in low aspect ratio wings being replaced by high aspect ratio outer panels which on one version gave a span of 106 ft. The RB-57D was designed to undertake high altitude strategic reconnaissance, but it did in fact carry out many other tasks including Electronic Counter Measures, sample collection and high altitude research. In fact the full story of the RB-57D and the EB-57D (the ECM version) have never been told and it is likely that some time will elapse before it is.

During various exercises in the USA the B-57B acquitted itself extremely well, fulfilling the task for which it was designed above and beyond expectations. But during the Vietnam war the aircraft was called upon to perform in earnest and happily, when the friendly trappings of exercise operations were removed, it was not found to be wanting.

The first two aircraft to perform in South East Asia were B-57Es that undertook highly secret reconnaissance work by day and night. For two months these two aircraft were the sole representatives of the B-57 in South East Asia, but on August 4 1964 the US Defence Secretary ordered 36 B-57s to be deployed to South Vietnam.

Accidents and ground activity by the enemy reduced the B-57 fleet to 21 effective aircraft and these operated in the interdiction role, doing their job effectively but without the associate publicity that so often misses aircraft and personnel that are not engaged in air-to-air combat and the more glamorous roles of air warfare, if indeed any combat role can be termed glamorous.

Under the Military Assistance Programme the US supplied the Pakistan Air Force with 30 B-57Bs in 1959 and in 1965 some aircraft were handed over to the Republic of Vietnam Air Force, although these aircraft were initially operated by USAF crews due to a lack of suitably qualified pilots in the RVNAF.

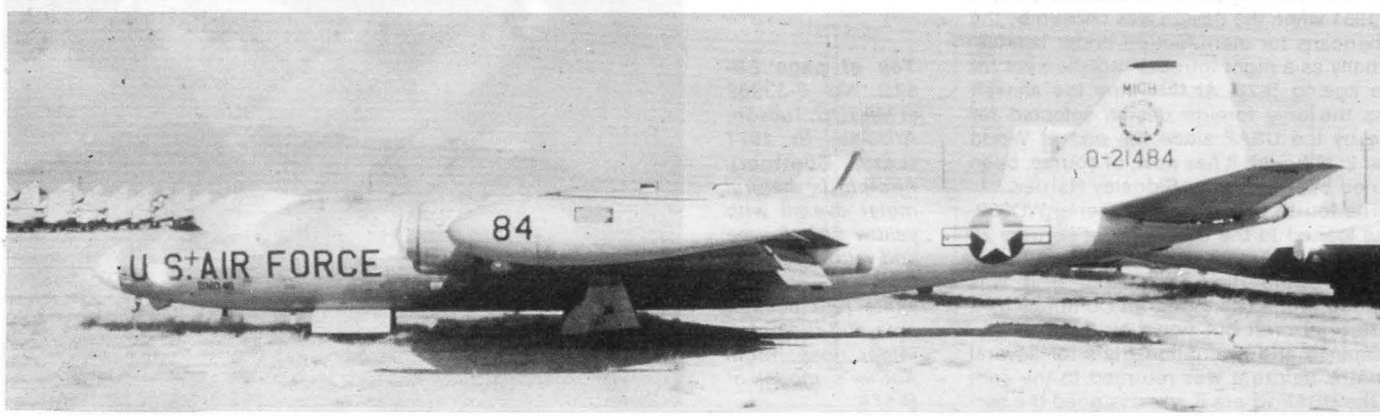
The final version of the B-57 was the B-57G for which existing B airframes were modified. The G had a completely redesigned nose housing a multiplicity of radar and operated in Vietnam for a short period before being withdrawn and issued to the 190th Tactical Reconnaissance Group. The extremely odd shape of this aircraft's nose contours would make yet another Canberra conversion and it is well illustrated in Profile 247 which contains much more comprehensive details about all the B-57s, and is a must for Canberra/B-57 fanatics.

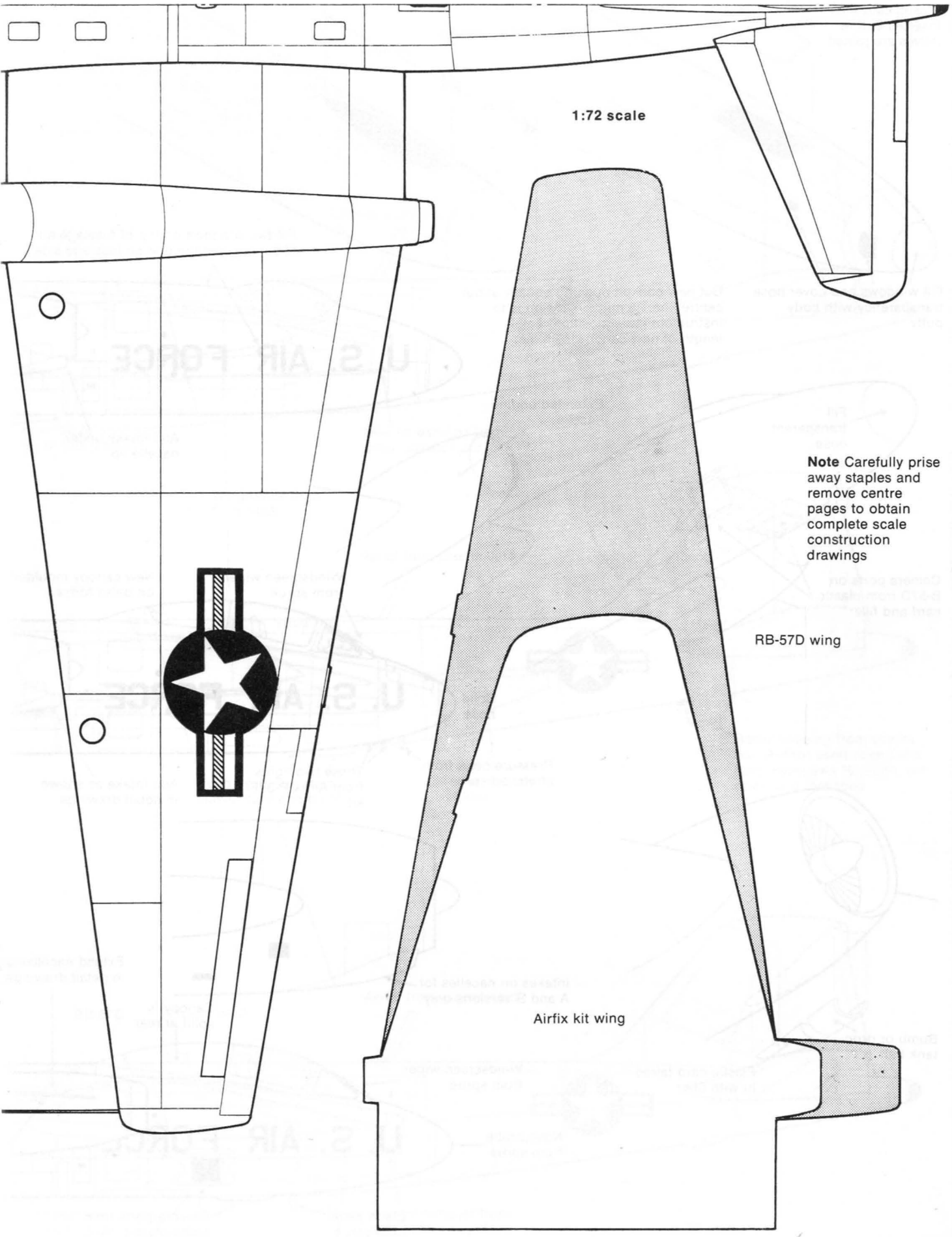
Compared to the RB-57F conversion which relied on either scratch-building or a vac-form kit, the B-57A, B, and RB-57D are fairly simple.

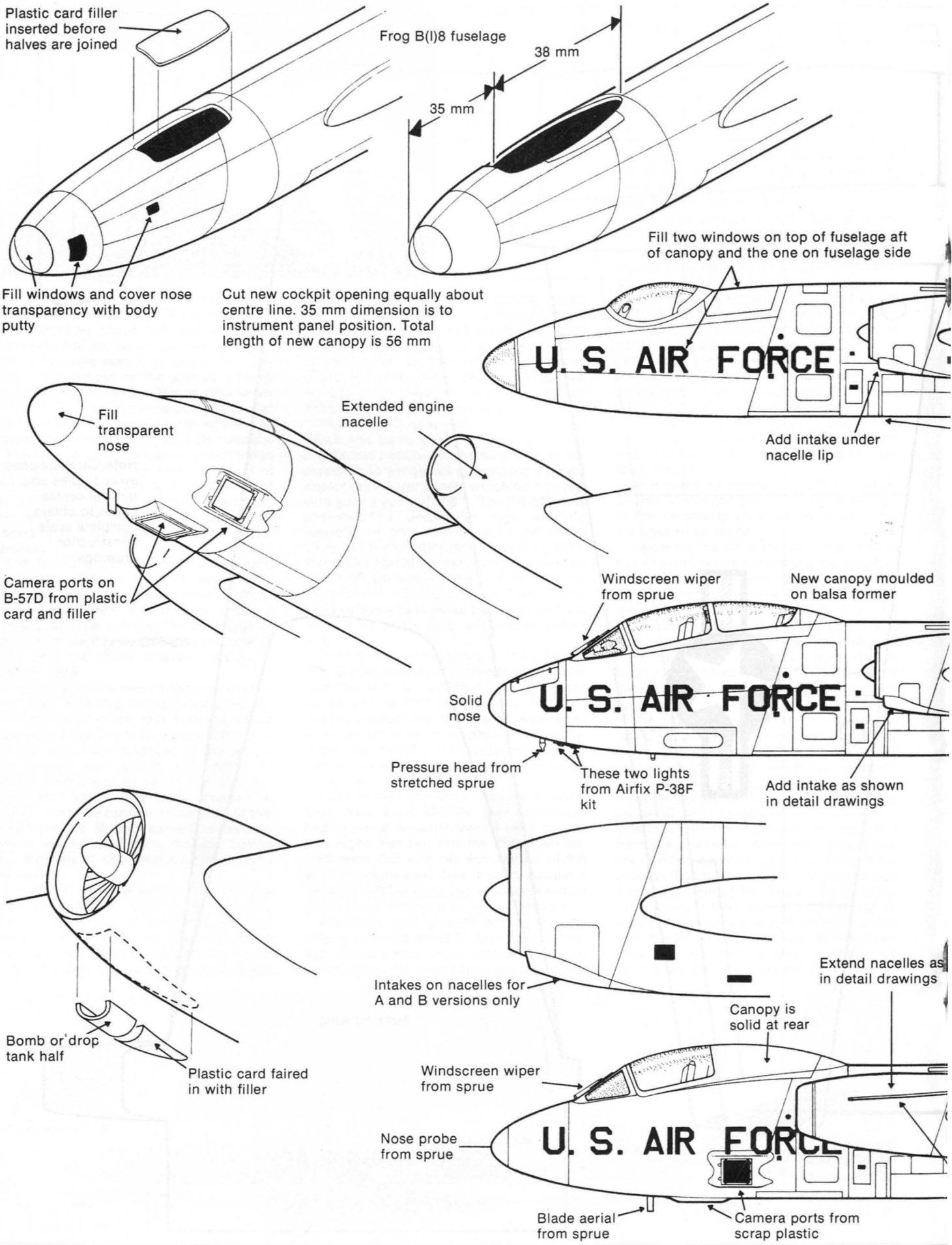
As mentioned before the B-57A is more-or-less a straight B-2 in USAF markings, but to be strictly accurate there are some changes to be made.

Assemble the kit in the way described in the kit instructions but reduce the length of parts 50 and 46 by 2 mm so that they do not protrude from the engine nacelles as far as they do on the British aircraft. The next major change is also to the engine nacelles and this is the adding of two lip intakes to their lower front cowlings. These intakes must also be fitted to the B-57B so the work described here will not be repeated for that conversion.

The intakes can be made in a variety of ways, but the one I chose was the use of two bomb halves from the spares box. I found two mouldings which had recesses to accept fins and from these cut off the bulbous portion of the bomb casing. The parts left were cemented to the Canberra cowlings with the recesses lined up 3 mm from the intake lip. When the cement was dry I added a plastic card strip behind the casings then built this up to the correct size and shape using filler. The filler was left to set overnight then carved and sanded to shape making sure that it merged neatly into the underline contours of the cowlings. The moulded recesses in the bomb casing, which now form the leading edge

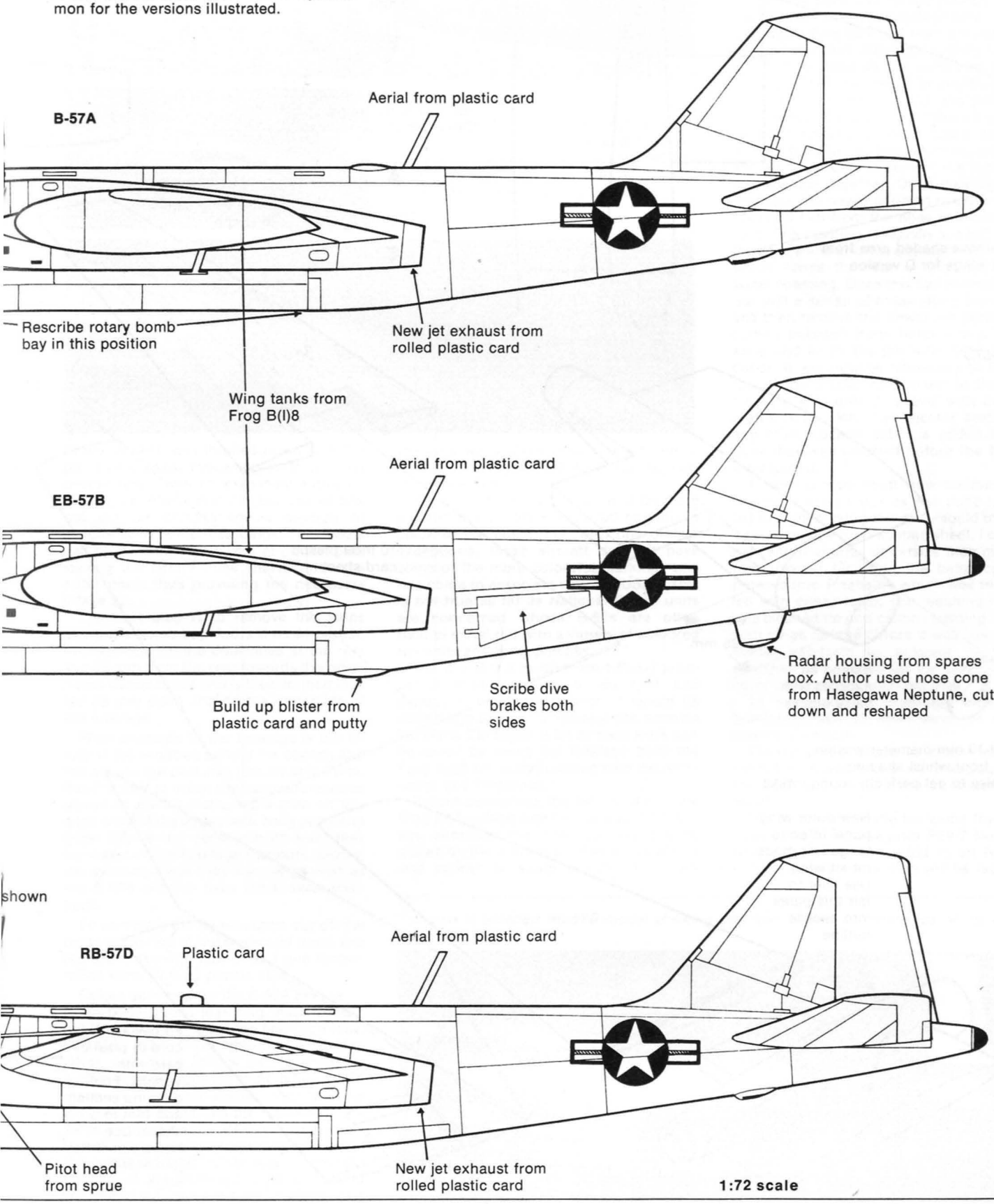



1:72 scale
Note Carefully prise away staples and remove centre pages to obtain complete scale construction drawings
RB-57D wing
Airfix kit wing


Plastic card filler inserted before halves are joined
Frog B(I)8 fuselage
38 mm
35 mm
Fill windows and cover nose transparency with body putty
Cut new cockpit opening equally about centre line. 35 mm dimension is to instrument panel position. Total length of new canopy is 56 mm
Fill two windows on top of fuselage aft of canopy and the one on fuselage side
U. S. AIR FORCE
Add intake under nacelle lip
Fill transparent nose
Extended engine nacelle
Camera ports on B-57D from plastic card and filler
Windscreen wiper from sprue
New canopy moulded on balsa former
Solid nose
U. S. AIR FORCE
Pressure head from stretched sprue
These two lights from Airfix P-38F kit
Add intake as shown in detail drawings
Intakes on nacelles for A and B versions only
Extend nacelles as in detail drawings
Canopy is solid at rear
Bomb or drop tank half
Plastic card faired in with filler
Windscreen wiper from sprue
Nose probe from sprue
U. S. AIR FORCE
Blade aerial from sprue
Camera ports from scrap plastic

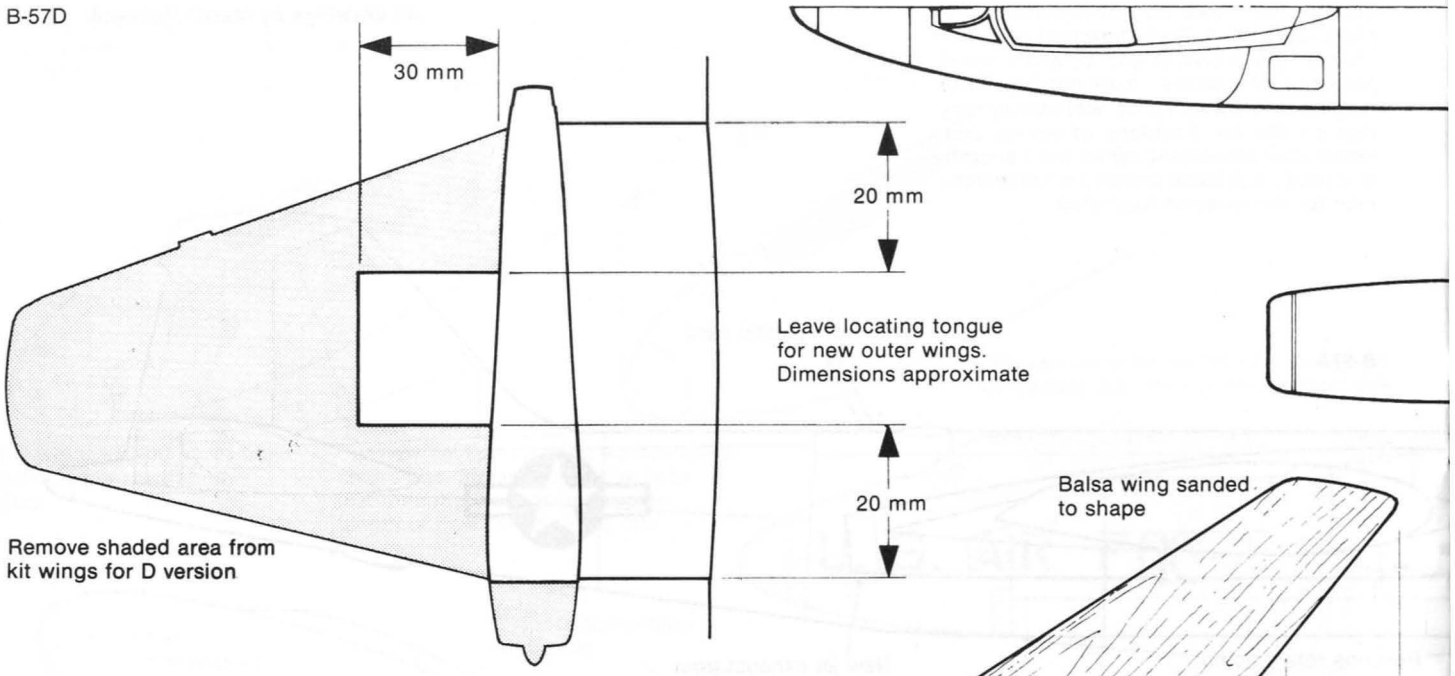
These three views do not represent any particular aircraft. They show the basic outlines of the B-57A, B and D, and normal positions of national markings. The Bu number and 'US Air Force' was usually carried on the fin. Positions of aerials and radar/ECM equipment varied from aircraft to aircraft, but those shown are fairly common for the versions illustrated.

All drawings by Martin Holbrook

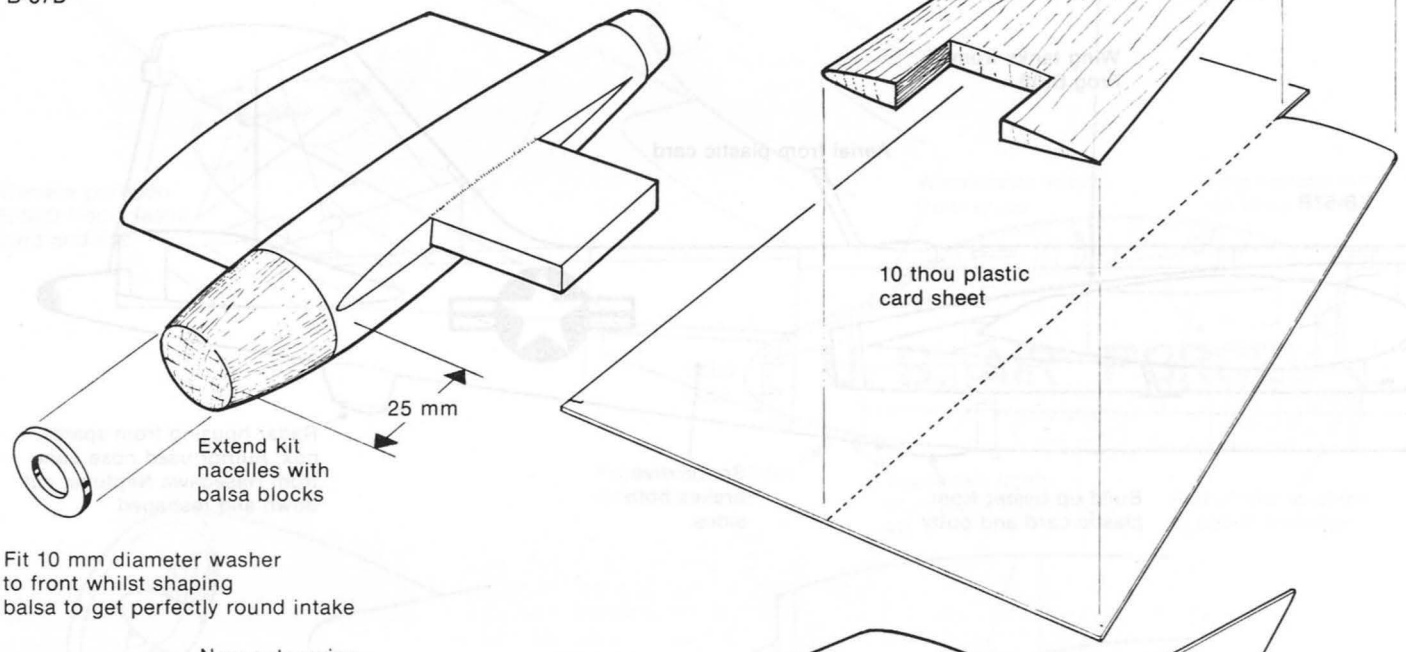


1:72 scale

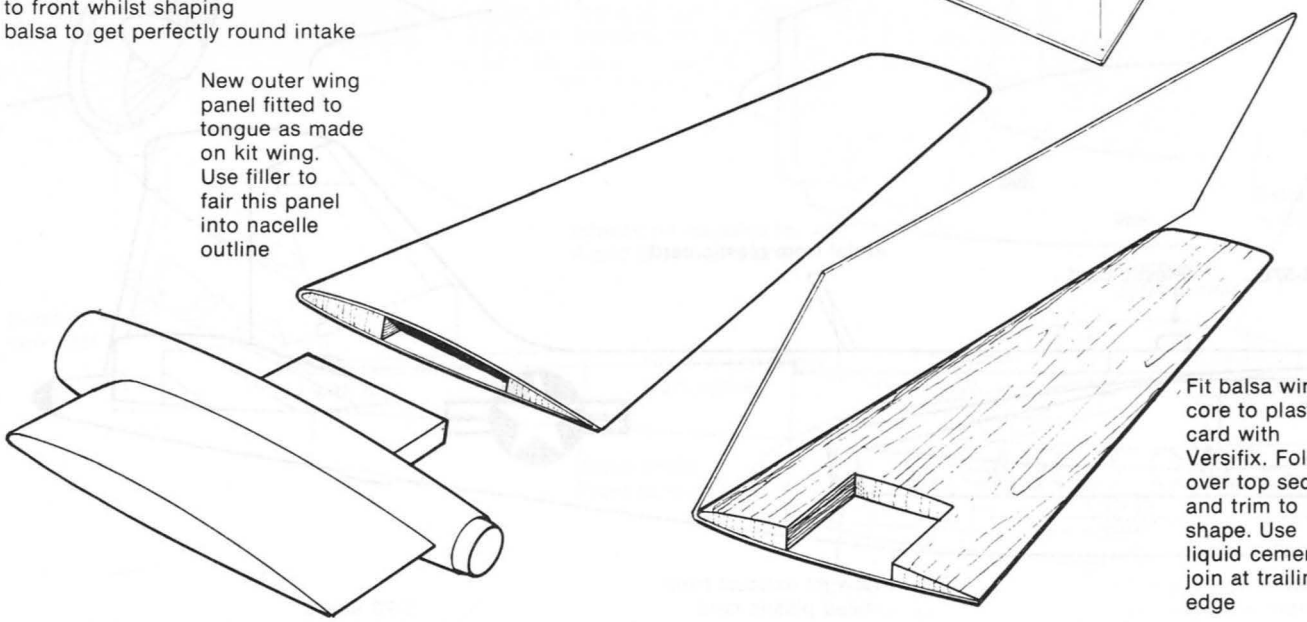
B-57D

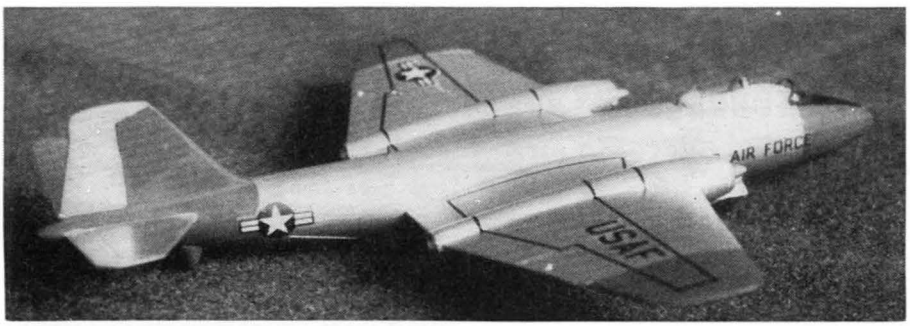


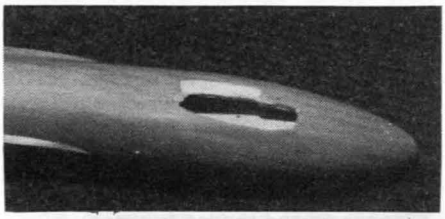
B-57D



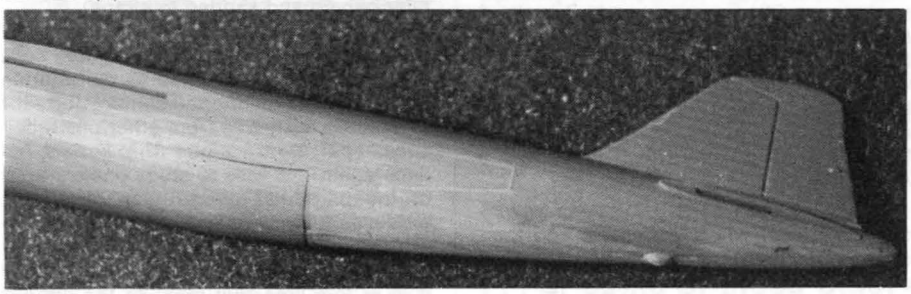
Fit 10 mm diameter washer
to front whilst shaping
balsa to get perfectly round intake







Above *Author's model of RB-57B with red tail area, nose and wingtips.* **Left** *The basic outline of the new canopy for the RB-57B and D can be seen here.* **Below** *Tail area of model RB-57B showing dive brakes.*



of the intakes, was thinned down with the point of a sharp modelling knife and the overall result was an extremely authentic looking lip intake. Should your spares box not yet be comprehensive enough to include such bomb mouldings, the intakes can be built up with layers of plastic card leaving the centre ones shorter than the outer ones, thus providing the necessary intake lip.

The next step is to remove the strips along the bomb-bay doors then fit part 93 in place and fill the door lines at the rear and 25 mm from the rear towards the nose. A new demarcation line is then scribed in at the 25 mm point around the underside of the fuselage.

Final attention to the fuselage is the filling of the windows behind the canopy and the one on the port side just aft of it. To do this it is best to insert the transparencies as shown in the kit instructions then fill any gaps around the edges with body putty and when this is dry sand smooth until they form part of the fuselage contours. During the painting stage they are overpainted as the B-57A did not have these crew positions.

To complete the construction cut off the rings at the rear of the engine jet pipes and replace these with new ones 1 mm longer, rolled from 10 thou plastic card.

Colour schemes for the B-57A are plentiful in publications featuring these aircraft but if you want to show the first prototype, 52-1418, then finish the model overall silver, add black stripes on the wing top surfaces from Letraset, and apply USAF markings from the spares box. National insignia was applied to the fuselage in the same position as the RAF roundel, to the top of the port wing and lower surface of the starboard wing. USAF was painted on the top of the starboard wing and lower surface of the port wing, while 21418 from the serial was applied to each side of the fin in black, the legend 'US Air Force' appearing above this.

Some of the early B-57As and Bs were painted overall black with red striping in place of the black, but, with one or two exceptions, these aircraft did not have some of the more colourful markings one has come to associate with the USAF. This is not true as far as National Guard units are concerned whose B-57s are often natural metal but with a variety of coloured tail units and wing patches.

The B-57B is a much more difficult proposition than the A as a new nose and canopy is needed. Although it would be possible to build a completely new nose on the Airfix Canberra, a lot of hard work can be saved by using the fuselage from the Frog B(I)8 kit, in conjunction with the Airfix wings and tailplanes.

Before cementing the two halves of the Frog kit fuselage together, scribe the fuselage airbrakes into the rear sections as shown on the drawings, a flexible steel rule and scriber or sharp pointed knife will allow this to be done quite easily, the hardest part being the vertical lines at the rear and front of the brakes. But this is where the flexible rule comes into its own and providing the fuselage is held firmly on a non-slip surface — such as a pinned down sheet of wet and dry paper — no difficulties should arise.

The next step is to fill the cockpit opening on part 1 (the port fuselage side), this is done by cutting an insert from a sheet of 20 thou plastic card, heating it slightly to enable it to be bent to the curvature of the fuselage, then glueing it in position. The cockpit floor, part 38, is inserted but lengthened with plastic card but do not use the ejector seat or control column, parts 36 and 39. Now fix the two windows, parts 42 and 43, in place and cement the halves of the fuselage together. Once they have set mark out the new elongated cockpit which starts 35 mm from the nose and is 38 mm long. The opening is equally spaced about the centre line and has a straight front edge which forms the rear of the instrument panel coaming. Once this has been marked out drill a series of holes along the edges and then remove the unwanted portion by cutting between these holes with a sharp knife and finish the job with wet and dry paper. It will now be necessary to fill the top of the plastic card insert in the port fuselage side until it is level with the aircraft's outer skin. Two ejector seats and any other cockpit detail is added to the floor that was inserted before the halves were joined.

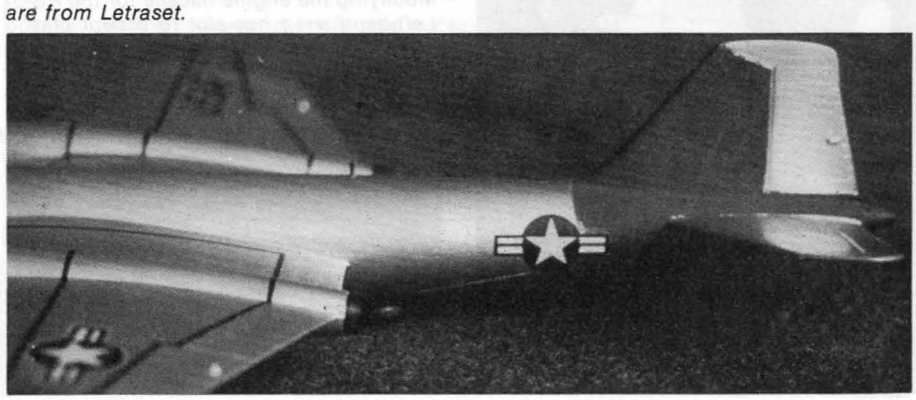
A new canopy must now be made by carving a balsa block as was done for the RB-57F, then using this as a mould to form a clear canopy from acetate sheet. I carved my canopy slightly undersize then made a resin master by using the balsa canopy pressed into Plasticine which was then filled with epoxy resin. The resulting mould was cleaned up and canopy framing added with strips of tape before it was used on a Mattel vac-form to produce as many canopies as I needed for the various Canberra conversions I had planned.

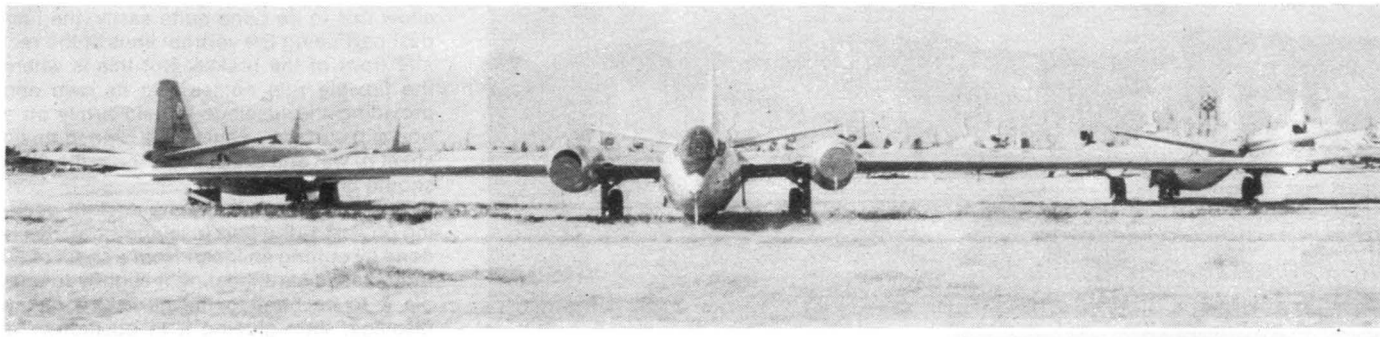
To complete the fuselage insert the bomb-bay, part 35, then sand the whole assembly smooth.

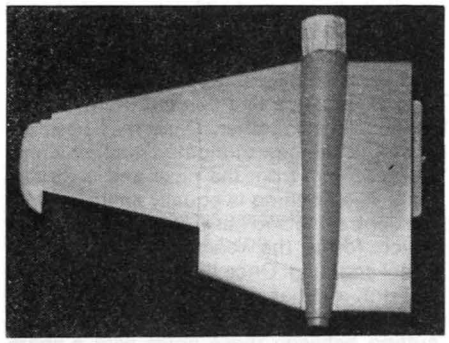
The version I chose to model was an EB-57E so it was necessary to add some of the ECM gear in the form of blisters and aerials.

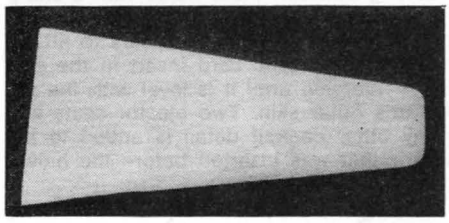
The blister under the tail came from the nose cone of a Hasegawa P2V-7 Neptune which had been converted to an RAF -5 version — this conversion will be featured

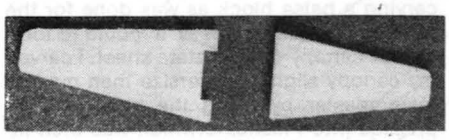
Tail area of finished RB-57B model showing new dive brakes and markings. Wing stripes are from Letraset.

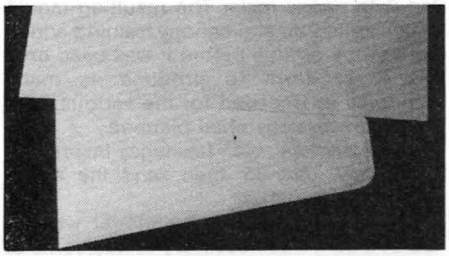


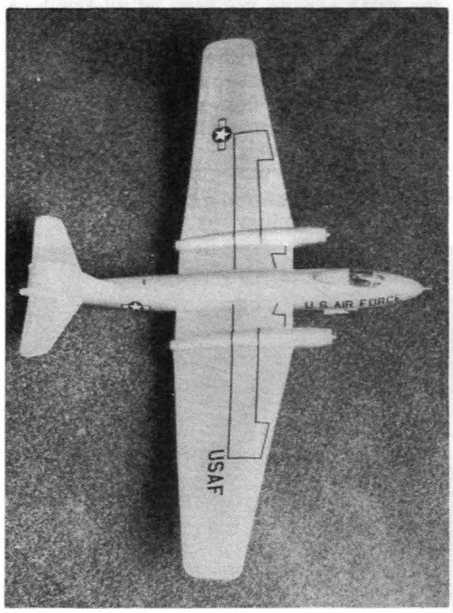












in a PSL book due for release later this year — and the others were made up from suitably reshaped components from the spares box. But once again all such pieces can be scratch-built from plastic card or balsa if your spares box does not yield the correct shaped pieces.

The Airfix wings are assembled with the engines modified as previously described and it will be found that once the locating tabs are modified they fit the Frog fuselage very well, although some filler is needed around the fuselage join lines. If wing tanks are fitted use those from the Frog kit as they are more accurate than those in the Airfix offering.

The clear nose cone and fuselage windows are filled where necessary and then sanded into the general fuselage contours and the model is ready for painting in the chosen scheme. Once again this will depend on the individual concerned and the research he is prepared to carry out but the choice is a wide one varying from an overall black to natural metal and SE Asia camouflage.

The instructions given cover the basic changes to the RB-57B, C and E airframes so it is essential to check published photographs and drawings to find out exactly what protrusions in the form of aerials and electronic equipment housings might be on the aircraft you wish to model. The choice is so wide that it is not possible to include every possible combination in this magazine, but reference to the material listed at the end of this article will be of considerable help.

The hardest of these three conversion is without doubt the RB-57D as this requires completely new outer wing panels and considerably modified engines. As good a starting point as any is the fuselage which is built in exactly the same way as that described for the B-57B using the Frog B(I) 8 kit, the exception being that the dive brakes are not needed for this aircraft. But the fairings housing camera equipment must be added under the canopy and forward of the nose wheel gear well. These are clearly shown on the drawings and are made from layers of plastic card faired with filler carved and sanded to shape.

The cockpit canopy is the same as for the B-57B but the rear section is painted solid and only one seat is fitted to the interior. Apart from the mentioned camera ports the fuselage is fairly free from other protruberances apart from various whip aerials, but once again it is wise to study photographs of the particular aircraft you choose to model as there are some differences. Turning to the wings it will be seen that these are entirely different to the Canberra's and it is in this area that most of the difficult work occurs.

Before assembling the Airfix wings cut off the forward parts of the engine nacelles level with the wing leading edges, making sure that the cuts are vertical. Now measure 30 mm from the outer edges of the nacelles into the wing outer panels and cut these off along the 30 mm line. From the leading and trailing edges of the remaining parts of the outer panels measure in towards the centre line 20 mm and cut off the forward and rear parts along the line of the engine nacelle. This will leave a tongue in the centre of the engine nacelles which serves as a locating point for the new outer panels.

Trace the outer panel outlines on to balsa sheet 6 mm thick, cut these out and sand them to aerofoil section making sure that the 6 mm at the root tapers to approximately 2 mm at the tip. The balsa outer panels can now be used to form plastic card wings.

This can be done in two ways. The first is

Top of page *Another view of the EB-57D at Tucson* (Larry Buettner). **Left, top to bottom** *Modifying the engine nacelle for the RB-57D model; balsa wing core; wooden wing cores. Left-hand wing has slot to accept plastic tongue cut-out; plastic card to cover RB-57D wing; finished model RB-57D. Note extended span and new nacelles.* **Below** *Close-up of nose area of RB-57D showing new canopy, camera ports and extended nacelles.*

to wrap 10 thou plastic card around the balsa, cut it to shape then cement the trailing edges and tip with liquid cement. When dry, slide out the balsa and fit the plastic card panels to the tongues previously made on the original Canberra wings. This method means that the wings will be hollow and rather prone to bending, so in my model I chose to use the second method. This is to leave the balsa as the wing core which adds to the overall rigidity. To do this, first cut out a section at the root of the balsa wings to fit the tongue left on the original injection-moulded wings, now trace the outline of the wing on to 10 thou plastic card and cut out just the lower shape. Cover the balsa wing and the marked plastic card with an impact adhesive such as Rexel's Versifix, making sure that the adhesive is spread evenly and thinly otherwise bumps will appear.

After leaving both surfaces apart for a couple of minutes, press them together and leave to dry. Now cover the top surface of the balsa with Versifix and similarly spread the adhesive over the plastic card. Use a flat smooth surface and slowly fold the wing over on to the plastic card, making sure that the plastic card follows the top contours and is firmly stuck in position, run liquid cement along the trailing edges and wing tips and tape these together until they are dry. The surplus plastic card is now trimmed away from the folded-over top section and the trailing edges and wing tips cleaned up with wet and dry. If problems are encountered at the tips small inserts of plastic strip or filler can be inserted and sanded to the general outline of the tip.

Once the wing shape has been successfully made and it has dried, control surfaces can be scored into the plastic card covering with the steel rule and scriber. If the balsa core has not been used, this must be done very carefully otherwise the thin card will be penetrated.

Having made the new outer panels they are placed on one side whilst work is carried out on the extensions to the engine nacelles.

This is done by cementing two balsa blocks into the parts of the nacelles remaining on the wings, these blocks should be 25 mm long and the same diameter at their base as the kit nacelles. Once they have set firmly mark the centre point at the front and fix a 10 mm diameter disc, preferably from metal or hard ply, to the front. The balsa is now carved to a circular cross section, making sure that it follows the contours of the engine nacelles and is reduced at the front end to the 10 mm diameter of the previously fixed disc. Finish the final shaping with flour paper, then remove the guiding disc and hollow out the intake area. This can be done by carefully drilling away the unwanted balsa and finishing off with sandpaper wrapped around a pencil or piece of dowel.

Parts 47 and 51 from the Airfix kit can be inserted into the intake areas and the starter cones, parts 46 and 50 fitted to these, but make sure that these components are buried deep enough so that the points of the starters, parts 46 and 50, do not protrude outside the intake lip. During this engine modification work it is essential that

Continued on page 696

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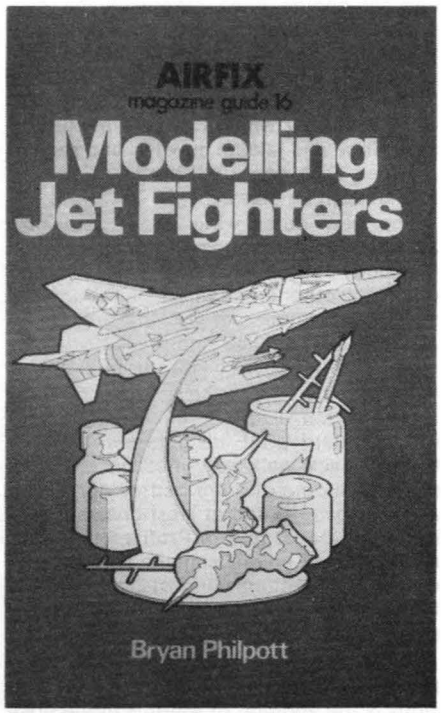
by Bryan Philpott



This new title from one of Britain's foremost modelling authors is an informative guide to the specialised techniques of assembling, detailing, converting and painting models of jet fighter aircraft constructed from plastic kits.

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a careful watch is kept on the side contours as these must be accurate and follow the original engine lines otherwise the new intakes will either droop or stick up above the thrust line, the drawings make this point quite clear.

The balsa engine extensions are painted with grain filler which can be a mixture of clear dope and talcum powder, and sanded between each coat until the finish is hard and smooth as glass.

The new outer wing panels are now attached to the tongues and any gaps filled with body putty, similar treatment is carried out in any other areas where gaps or mould sinks have appeared and the whole airframe is then sanded and given an undercoat before application of the final colour scheme.

Most of the RB-57Ds were natural metal with standard USAF insignia and the customary black walk-way lines on the wing surfaces. Some of them had coloured fins and unit badges and at least one, which is illustrated on page 6 of Profile 247, had a most unusual colour scheme when it was used in conjunction with tests to determine the quality of camera lenses and film emulsion.

One important point that must be remembered with all the described conversions is the addition of weights in the nose if the models are to stand on their undercarriages. As far as the B-57B and RB-57D are concerned this does not present too great a problem as the nose cones are solid. But the B-57A had a transparent nose cone and it can be a job to conceal enough weight inside the fuselage to make this aircraft balance correctly.

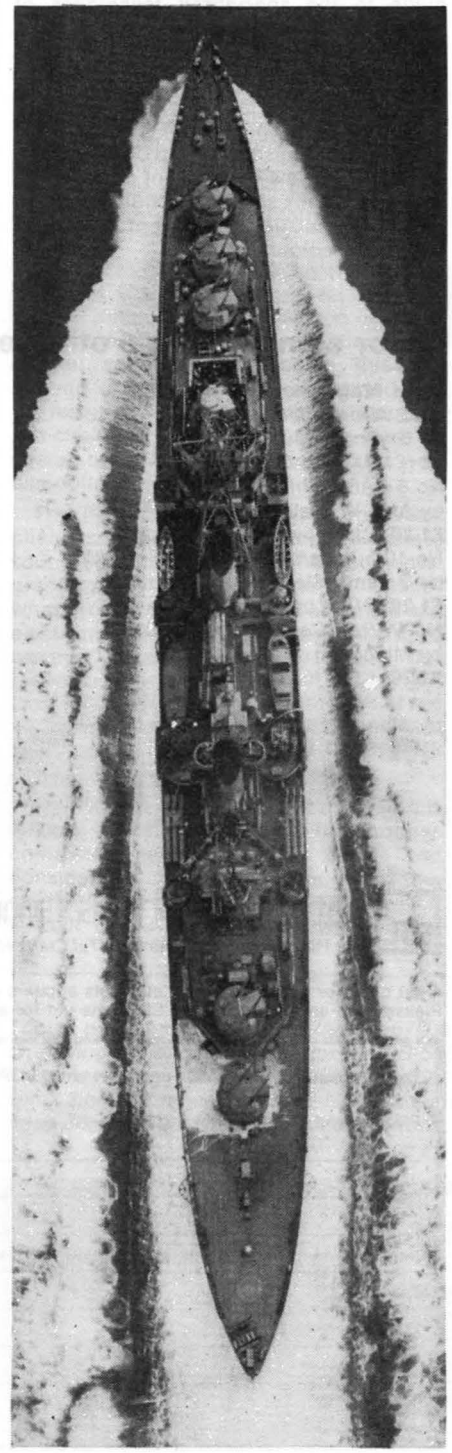
These conversions extend the number of modified Canberras covered in this magazine to eight, four British models having been dealt with in the April 1975 edition and four American variants of the basic B-57. There are still a lot more to be covered and when space permits it is proposed to look at the aircraft used by the French fitted with a Mirage nose, the B-57G and perhaps others, so like the real aircraft the potential behind the Airfix Canberra is enormous and to date only the surface has been scratched.

The following publications are all useful and the keen Canberra modeller could do no better than read at least some of them to find schemes and ideas for his own conversions: Profile No 54 *The Canberra Mk I & IV,* by K. Munson. Profile No 247 *The Martin B-57 & RB-57F,* by David A. Anderton. *The World's Fighting Planes,* by William Green. *The Canberra is 20.* Article in *Flight* magazine May 8 1969, by R. A. Walker. *The Silver Canberra.* Article in July 1974 *Air International,* by L. J. S. Houston. *The RB-57F.* Article in the *IPMS USA Quarterly,* by Major Duncan Wilmore. *Canberra 26 and still going strong.* Article in the April/May edition of *Battle. English Electric Canberra.* Article in *Scale Models,* January 1974. *The Evergreen Canberra.* Article in *Aircraft Illustrated,* March 1972. *Modelling the Canberra.* Article in *Airfix Magazine* by R. W. Liddiard, October 1973. *Canberra – BAC's original multi-role aircraft.* Article in *Aerospace,* April 1976, by Mike Gething. The scale plans of the Canberra B(I)8 in the MAP Plan Service, Pack No 2706, are an excellent asset that no Canberra modeller should be without. □

HMS 'Ulysses' and all that

Modelling Dido Class cruisers from Airfix kits described by **Ian Fleming**

IN THE LATE thirties the growing strength of the Luftwaffe made it apparent that a type of ship heavily armed against aircraft would be needed if convoys were to be adequately protected. Accordingly, the *Dido* Class was laid down, 11 ships with names of mythological characters (except *Cleopatra,* who of course was no myth, the same blunder being perpetuated in the present *Leander* Class). They entered service between 1940 and 1942.



These ships retained the hull design of the *Arethusa* Class, but the superstructure and armament were revised completely. They mounted an impressive ten 5.25-inch guns, designed for use against aircraft or surface targets, together with two quad 3 pdrs and four or six 20 mm AA guns. However, production of the ships seems to have outrun that of their 5.25-inch turrets, on which the *King George V* Class battleships naturally had priority. *Dido* was completed with a single 4-inch gun in place of the third turret, which was fitted later when it became available; *Charybdis* never had her full quota of 5.25s. *Scylla* never had any; she was given eight 4.5-inch guns, and was, in effect, armed rather like a *Tribal* Class destroyer than a cruiser. Nevertheless, all ships gave valiant service both in the Mediterranean, where *Bonaventure, Naiad* and *Hermione* were sunk, and in the Western Approaches; *Charybdis* was sunk off Normandy in October 1943.

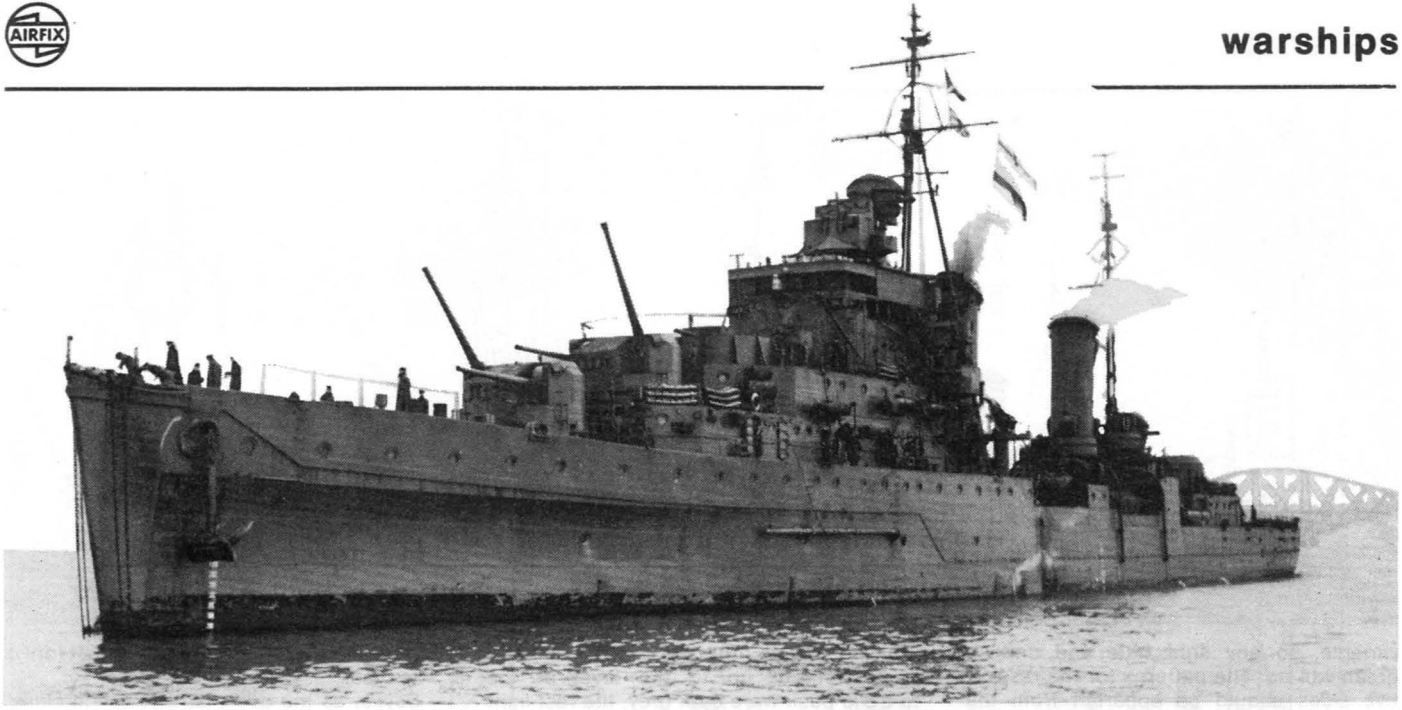
The modelling instructions detailed below are for *Argonaut,* using the Airfix *Ajax*; other variants are given also, to provide the modeller with a wide and interesting choice of subject.

Argonaut Shorten the hull by cutting squarely through it 13 cm from each end; discard the centre portion and cement together the bow and stern sections. Strips of 10 thou plastic card representing the armour belt will very nicely conceal the join.

The fo'c's'le deck needs to be shortened a little and the after deck extended with plastic card; some locating lugs and holes should be removed from both. Next, all the superstructure, which conveniently consists entirely of flat surfaces, should be made up from plastic card, taking measurements from the drawing. For the bridge windows, strips of transparent plastic with the frames painted on would be a tricky but effective refinement. Funnels are made with stiff paper bent round a former.

The five turrets should be carved from ⅜ inch (9 mm) dowel; with the awkward shape at the front it would probably not be feasible to mould them from a single former. Patience and a sharp knife and file will therefore be required. Quad pom-poms can come from the spares box or, better, be made up from scrap and plastic rod; 20 mm guns likewise, these being simply rod for the trunk and the barrel and card or even paper for the shield. *Argonaut* had six of these, as shown on the drawing. Do keep the left-over 4-inch guns, which are very

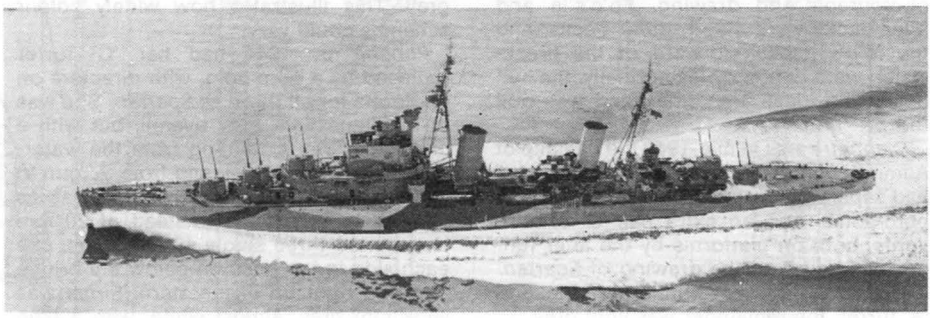
Argonaut *at speed when new in October 1942* (IWM).

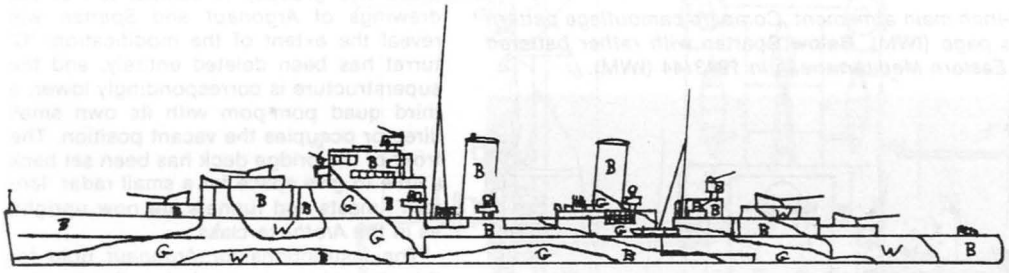


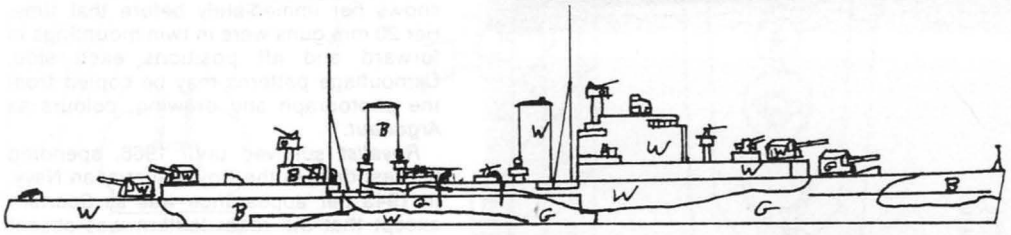
useful spares.

Finally, add remaining items such as directors — a new aft director will be required — searchlights, boats and davits; depth-charge rack on the quarter-deck, propeller-guards, triple torpedo tubes, ventilators, Carley rafts, and masts. The very clear photographs of *Argonaut* may give further ideas for super-detailing and sea settings, both of which are commended.

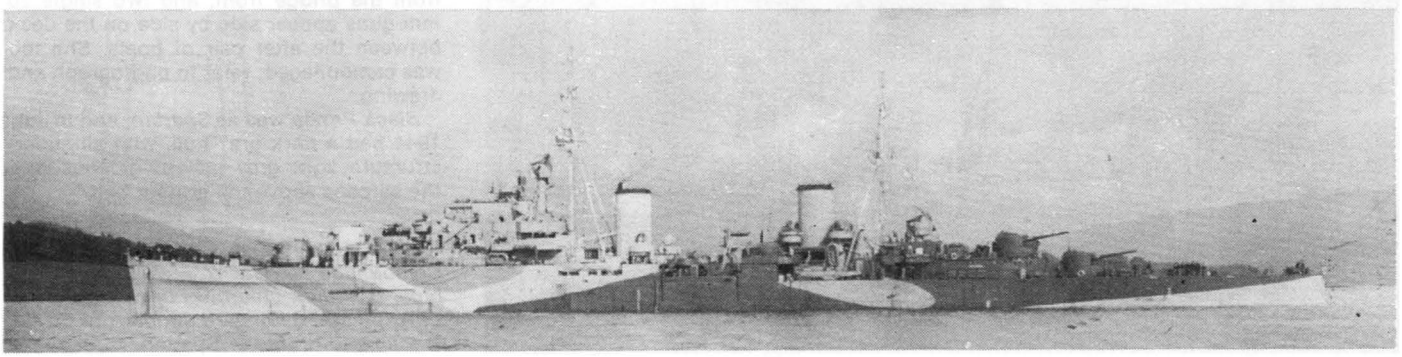
Argonaut was painted in white, dark green and light blue camouflage; the exact shades of camouflage colours were very

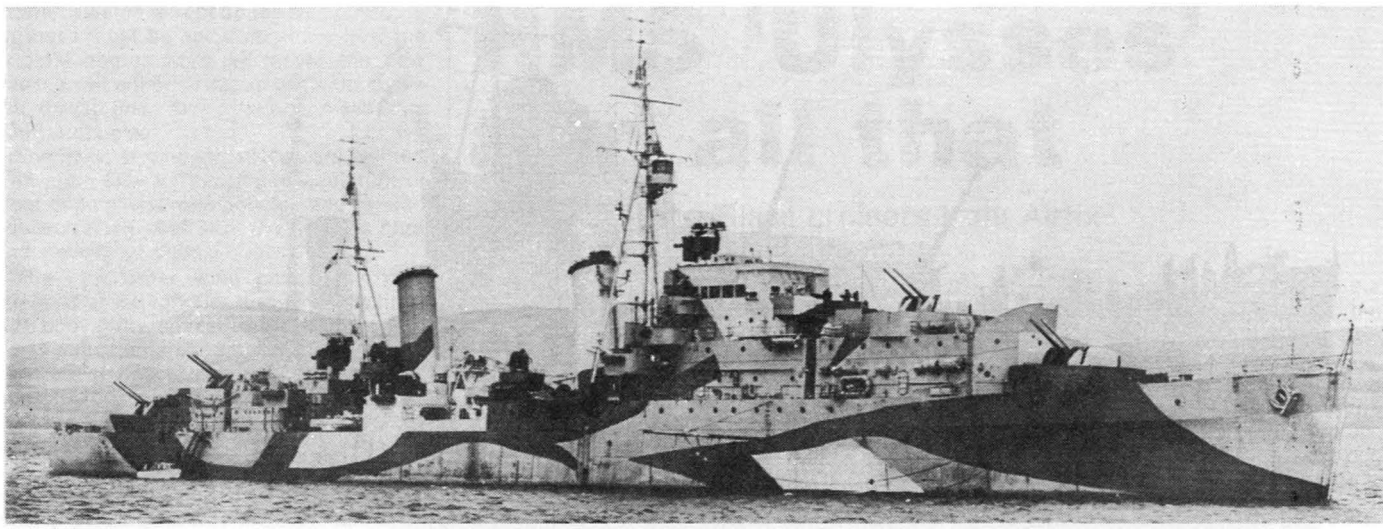






Top of page Dido *in 1940 had incomplete main armament, and quad .5-inch machine-guns in place of 20 mm* (IWM). **Above** *Another view of* Argonaut *when new in 1942* (IWM). **Left top** *Camouflage pattern for port side of* Scylla *(not to scale).* **Left bottom** *Camouflage pattern for starboard side of* Royalist *(not to scale).* **Below** Royalist. *Note camouflage pattern on this side compared with drawing above. Green is the darkest shade* (IWM).





variable, so any light blue and darkish green will do. The patterns for the respective sides should be apparent from the photograph and drawing. Fo'c's'le and after decks were wood, other decks, and the fo'c's'le deck forward of the breakwater, were dark grey. As normally, the hull below the black waterline band was dull red.

Cleopatra was in mid-1942 the flagship of Admiral Vian in the Med. She and *Euryalus* had separate small directors for their quad pom-poms, and an extra pair of searchlights, both on platforms by the after funnel, as shown on the drawing of *Spartan.* Each had a dark grey hull, fore funnel and 'A' turret; the remainder was light grey.

Naiad was as *Argonaut*; all her hull and superstructure up to the level of the fo'c's'le deck were dark grey, the rest light grey. This illustrates how widely colour schemes could vary!

Phoebe by 1944 had her 'C' turret replaced by a pom-pom, with directors on platforms for all three as *Spartan.* She was at that time light grey overall, but with a dark blue area extending from the waterline to after-deck level, and from 'A' gun to 'Y' gun. *Sirius* at the same time was as *Cleopatra,* except that instead of 20 mm she carried three single 40 mm guns, one each side in the position below the bridge and one right up in the stern. *Sirius* was very light grey, almost white, with a blue area as *Phoebe.* Oddly, the mainmast (only) was black.

Scylla, as the odd man out of the class, had a number of significant differences, and thereby makes a most interesting modelling subject. The modeller should refer to the photograph and drawings for structural differences and camouflage patterns. The colours are as *Argonaut.* 20 mm guns appear on a platform in front of the bridge; in sponsons beside the bridge; each side of the after director; and in twin mountings below the bridge each side.

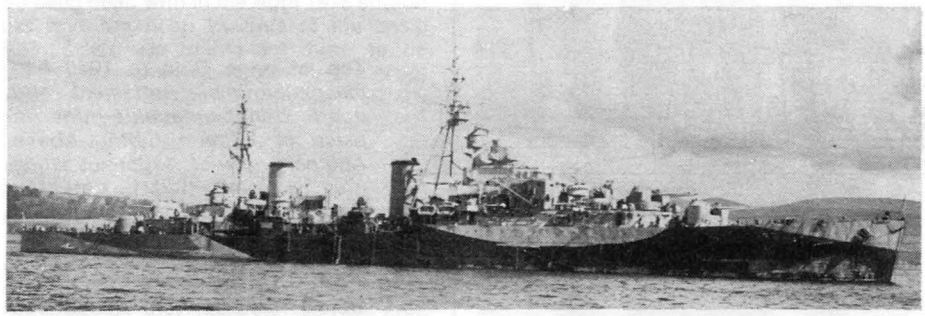
Five further ships completed in 1943-44 represented a modified version of the *Dido* class. (The famous but fictional 'HMS *Ulysses*' was based upon a combination of these two groups). A comparison of the drawings of *Argonaut* and *Spartan* will reveal the extent of the modification. 'C' turret has been deleted entirely, and the superstructure is correspondingly lower; a third quad pom-pom with its own small director occupies the vacant position. The front of the bridge deck has been set back a little to give space for a small radar 'lantern'; masts and funnels are now upright, as in the *Arethusa* class.

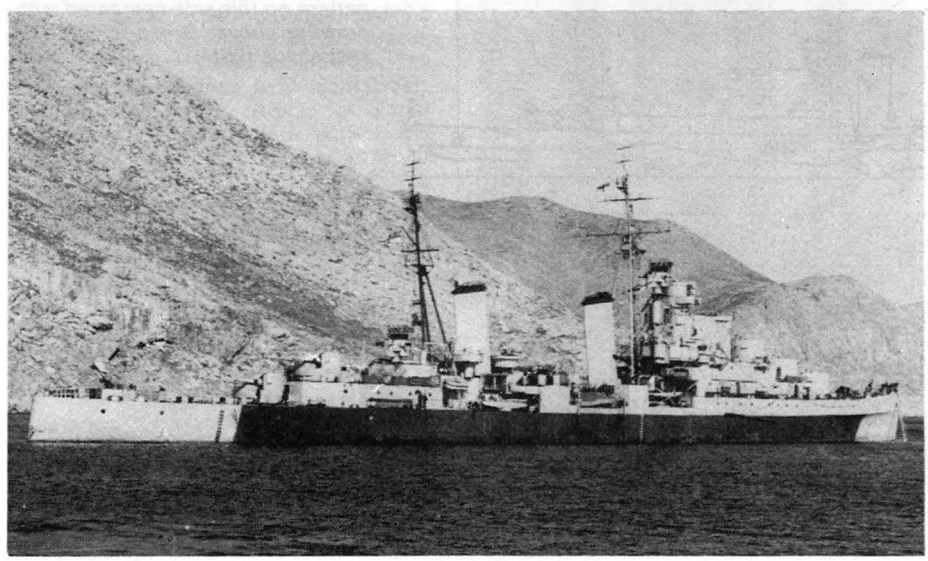
The instructions for *Argonaut* hold for this class also, represented on the drawing by *Spartan.* She was the only member of the group to be lost, during the Anzio landings in January 1944. The photograph shows her immediately before that time. Her 20 mm guns were in twin mountings in forward and aft positions each side. Camouflage patterns may be copied from the photograph and drawing; colours as *Argonaut.*

Royalist survived until 1966, spending her last days in the Royal Australian Navy. In 1943 her appearance was as *Spartan,* except that the radar lantern was absent from the bridge front, and two single 20 mm guns appear side by side on the deck between the after pair of boats. She too was camouflaged; refer to photograph and drawing.

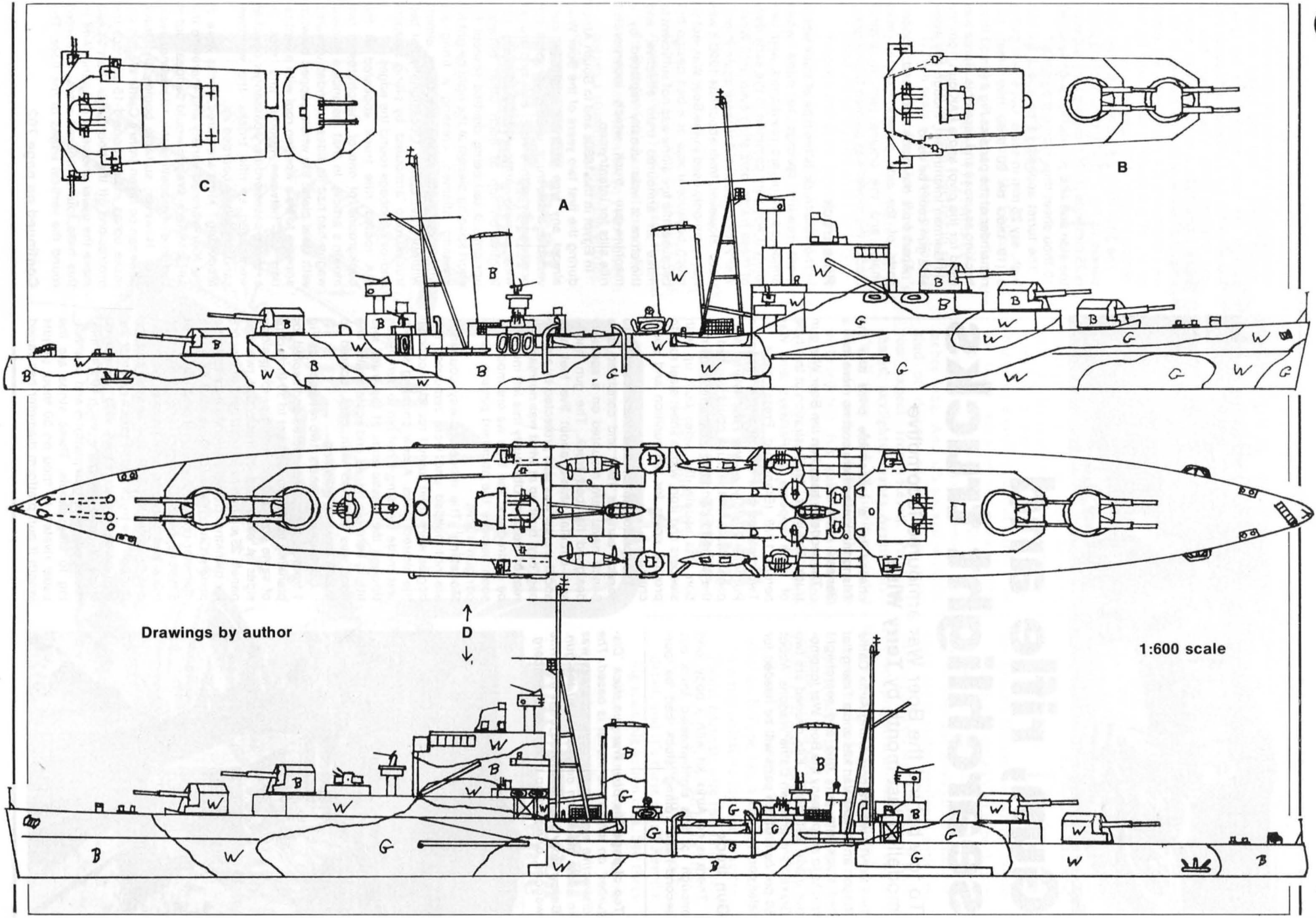
Black Prince was as *Spartan,* and In July 1944 had a dark grey hull, with all superstructure light grey including, unusually, the screens above the armour belt.

Top of page Scylla *with her unique 4.5-inch main armament. Compare camouflage pattern on this side with drawing on previous page* (IWM). **Below** Spartan *with rather battered paintwork* (IWM). **Bottom** Sirius *in the Eastern Mediterranean in 1943/44* (IWM).





Key to drawings. A *Profile of* Argonaut. *Camouflage pattern. W = white, B = light blue, G = dark green.* **B** *Forward gundeck of* Argonaut. **C** *Forward gundeck of* Scylla. **D** *Plan and profile of* Spartan.



Drawings by author

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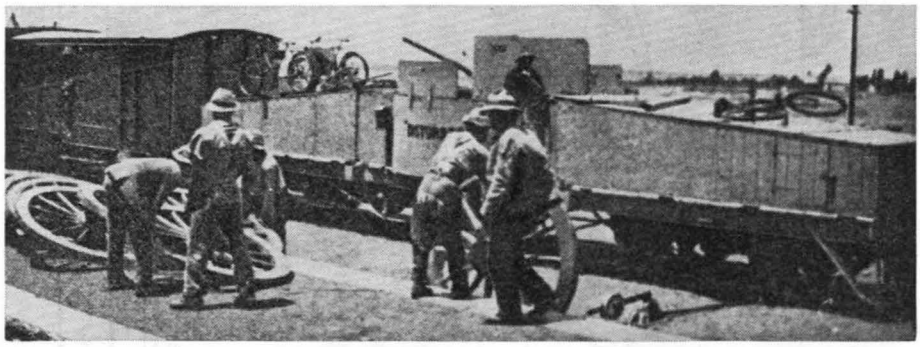


Gun, rifle and searchlight trucks

To tow behind the Boer War armoured locomotive modelled last month by **Terry Wise**

THIS MONTH WE are converting Airfix Cattle Wagon and Brake Van kits and a Triang flat bed truck into gun, rifle and searchlight trucks to accompany the Boer War locomotive made last month. Kits needed are two Brake Vans and two Cattle Wagons. About 50 per cent of the parts will be needed for later conversions.

Gun truck

There is no Airfix kit with a body long enough for this eight-wheeled truck but second-hand rolling stock can be purchased for a reasonable price and the Triang truck used here cost no more than a Series 2 Airfix kit.

The model is based on the Boer War gun truck 'Disturber.' An illustration of this type of truck appears in *Railways and War before 1918* (Blandford Press) plate 19. Two pictures of a similar truck appear in Purnells' *History of the First World War,* pages 382-3, so the truck could be used for the 1914-15 period in Belgium. Construction was usually the sides built up with sleepers and iron, with a sheet steel roof to provide cover for ammunition and spare crew.

The prototype of this truck came into service early in 1900 and consisted of a 6-inch naval gun mounted on a specially designed flat bed truck. The gun had a semi-circular shield about five feet high and the crew was also protected by a sandbag 'bay' built up at what was normally the rear of the gun. Obviously this left much to be desired and the type we are modelling soon became the standard pattern for 12 pdr gun trucks.

Modelling The model railway couplings are not needed and were removed. The bogies were then turned round to conceal the altered faces. A new coupling system was made by using a hot pin to burn holes through the plastic ends of the truck and fitting bent pin hooks and scale chain. The floor was patched with card, scored to match existing planking.

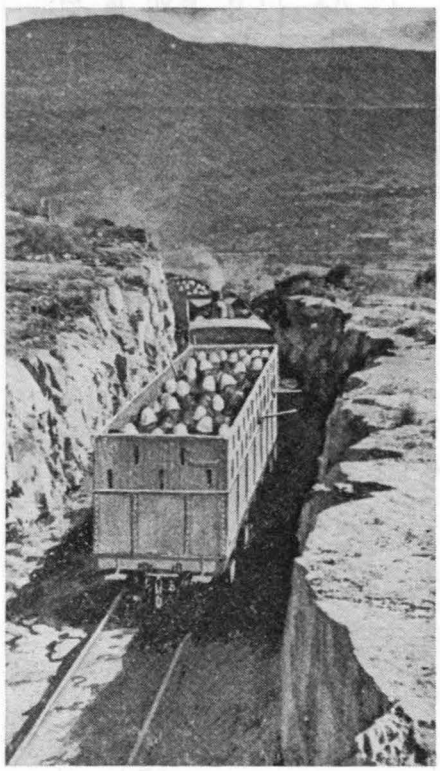
Cut four side panels (two reversed) as Fig 1 from 10 thou card, riveted and scored for planking as shown. Cement to 30 thou card of same size and fix within curbing along sides at each end of truck. Cut two end panels 25 x 8 mm in 30 thou card and score for planking. Cement at ends between side panels. Cut a disc of 30 thou card, 44 mm in diameter (adjust if your flat bed truck is of different overall length) and cement to truck bed between side panels. When set drill a hole through the centre and on through the truck bed to take a pivot for the gun barbette (see below). Add two curved strips of 'armoured plate', each 10 x 44 mm, round edges of gun platform and connecting to side panels. These strips are the usual riveted 10 thou on 30 thou. (Adjust length if gun platform diameter has varied on your model.) Add microstrip hinges and catches to loading doors on side panels, as shown in Fig 1, and one ladder on each side of the truck, reaching to the lower frame, at the joint between side panel and gun platform side. The ladders may be made from Slater's window kit or microstrip. Additional protective panels, 20 thou card measuring 5 x 15 mm each, are added on top of gun platform sides, fixed by two vertical lengths of microstrip.

The two ends are covered by the roof panels, as Fig 2. The 30 thou backing sheet is 25 mm wide by 68 mm long to fit between the side and end panels, the slightly larger 10 thou sheet thus hiding the joints.

The turret appears to be about six feet high, say 25 mm in scale. Cut shield as Fig 3 (10 thou on 20 thou this time); the remainder of the parts as Fig 4 (on 30 thou backing as usual) and assemble. Sprue was used for the pivot and a PAK gun from the old German Infantry set, though any available gun could be used.

Apart from the plank floor and wooden parts of the side panels (painted matt khaki) and the bogies (left in original black), the model was painted Dunkelgrau.

Top of page *The Boer War gun truck 'Disturber' on which the model is based. The distinctive slope to the covered areas was to allow maximum depression of the gun.* **Below** *Boer War armoured train with rifle wagons, bringing up troops at Stormberg.*



Rifle truck

The 'rifle truck' is the type of truck which most readily springs to mind when armoured trains are mentioned, and certainly it was very common in the early days of these trains, persisting even until World War 2, when such trains were again improvised. However, from about late 1900 it was not commonly used in the Boer War, not so much because it was of a bad design but because rifle fire alone was not sufficient to make an armoured train effective, and therefore it was usually replaced by a machine-gun truck which incorporated rifle slits for infantrymen.

In Egypt in the 1880s and in South Africa during the first two years of the Boer War, almost any type of truck might be converted as a rifle truck, usually unroofed, but occasionally with a roof. Flat bed trucks were usually armoured by placing rail lengths on top of each other between uprights, a rail being omitted (except for short spacing pieces) at the right height for kneeling riflemen, creating a firing slit which ran right round the truck almost without interruption. Occasionally flat bed trucks were 'armoured' by piling sleepers and/or sandbags round the edges.

A roofed rifle truck appeared in the background of one of the photos in last month's article. In that instance a mineral wagon had had its sides extended upwards with steel plate, the whole capped by what appears to be a wooden roof with a ventilation slit between armour and roof. In extreme cases ordinary passenger coaches were used as rifle trucks, the windows sandbagged or boarded up.

Modelling Most armoured trucks were of the four-wheeled variety and therefore the Airfix Mineral Wagon would be ideal, but at the time of modelling this kit was not available. However, suitable bogies and truck floor can be taken from a Cattle Wagon kit: make up as instructions 1-15 but cut the protrusions off the floor sides (Part 2) and make the usual choice of coupling. Add to this base four armoured sides, cemented round the vertical edges of the floor. The

Continued on page 702

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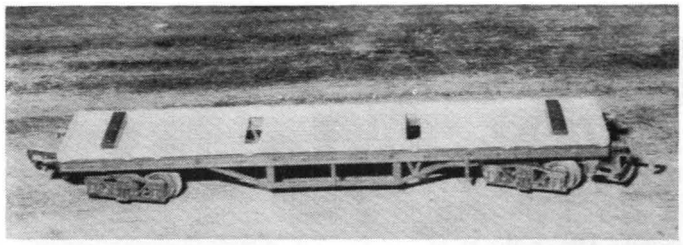
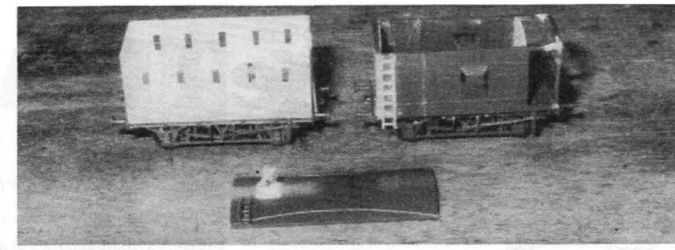
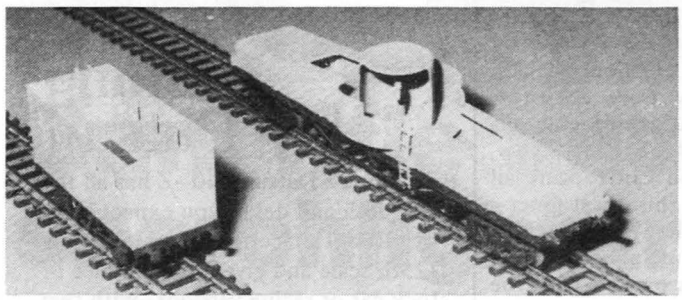
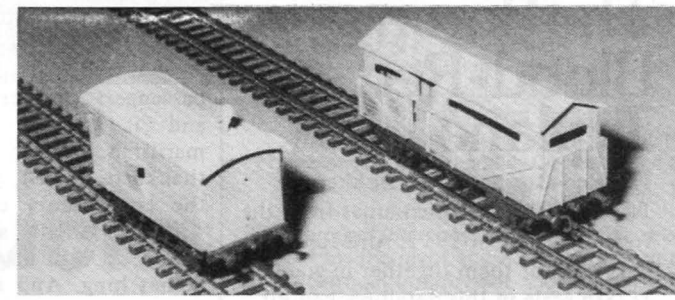





Top left *The Triang flat bed truck which, with minor alterations, forms the basis for the gun truck.* **Top right** *The rifle wagon and searchlight car with detachable roof ready for painting.* **Above left** *The completed but unpainted gun truck and rifle wagon.* **Above right** *The painted searchlight car and a Maxim gun truck, which will be modelled next month.*

two side panels are 30 x 71.5 mm in 30 thou' card, faced with 10 thou riveted card. Rifle slits are every 10 mm, starting 7 mm in from one end, with each slit 3 mm wide. This gives five a side. Start the slits 18 mm up from the bottom of the panels and make them 8 mm high. The two end panels do not have rifle slits. Measurements for the end panels are 29 mm square with the 10 mm facing card 31 mm x 30 mm high to conceal joints. The end panels fit right on top of the buffer beams.

Add a ladder at one end and paint Dunkelgrau with bogies, floor beams and buffers in matt black.

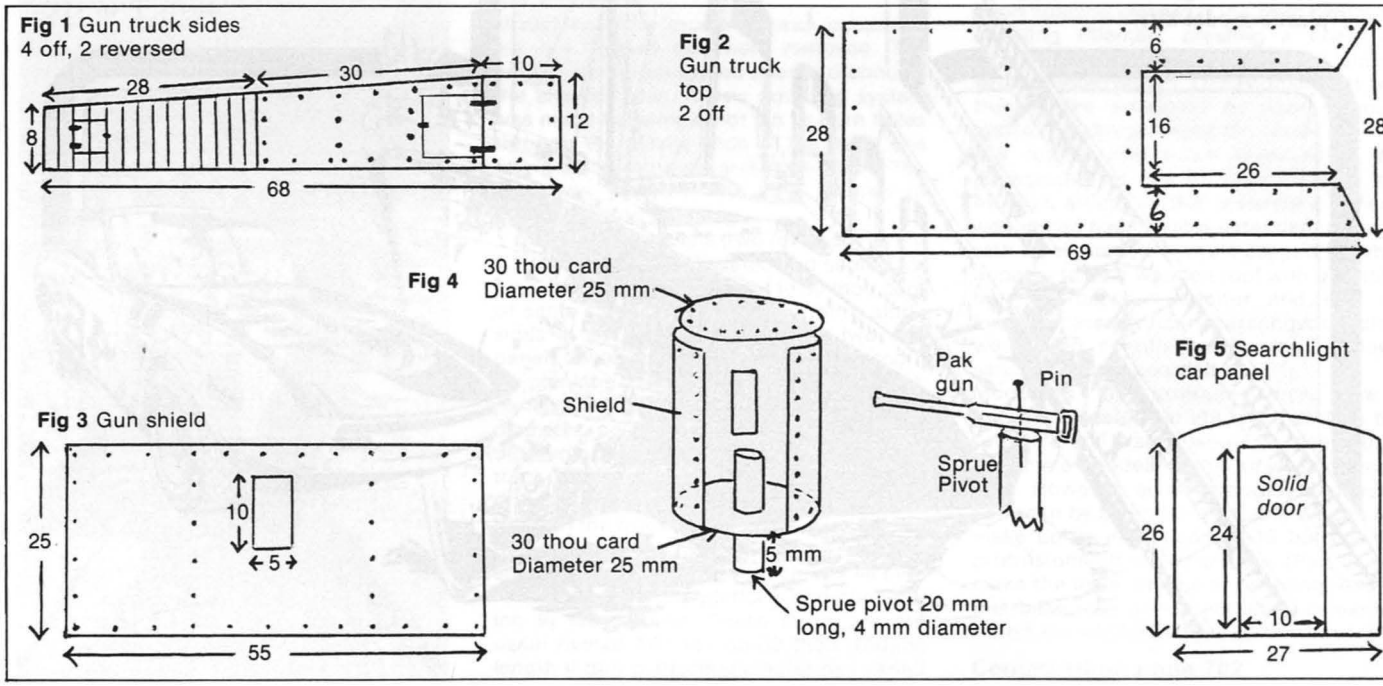
Searchlight and dynamo car

Sometimes searchlights were included in the Maxim trucks during the Boer War but this must have made the trucks rather cramped, with two or three traversing machine-guns, a searchlight operator raised above floor level, and a dynamo to supply the necessary juice. Certainly after late 1900 the searchlight often appears on the roof of a separate truck, which resembles the Airfix Brake Van in appearance.

Modelling Use the second Cattle Wagon kit to provide a base, following kit instructions 1-15 but trimming protrusions off floor edges. Make choice of coupling. Keep the roof but put the rest of this kit away for next month. Switch to the Brake Van kit, taking parts 30, 31, 24 and 29 from two kits (other parts will be used in later articles). Remove tabs from bottom of a Part 30, also locating ribs at sides of rear face and lamp brackets on uprights. Cement to one end of floor, the panel fitting on top of the floor.

Take a Part 24 and 29, remove locating rib and stub at bottom edge, and cement them to outside of floor to link up with end panel, first removing unwanted projections at other ends. Take second pair of Parts 24 and 29 and, removing section with observation area, use remaining pieces to finish off the side walls. The second end wall is made from pieces cut from Parts 30 and 31: cut off bottom panelling, reverse one and cement to other. Top with a curved section. Remove bottom edge spurs as usual. An internal cross panel, see Fig 5, is inserted where the side walls end, forming an entrance to the control room. Add a ladder to one side wall, furthest from the door, and in such a position as to conceal one of the joins in the side wall.

The roof is Part 38 of the Cattle Wagon kit with all locating ribs removed from its edges. New micro-rod ribs can be added to lock the roof in position if desired. A short curved ladder is added to the roof as a continuation of the side ladder, and the searchlight unit cemented 10 mm in from the roof edge. The searchlight was made from a 5 mm length of 5 mm diameter round sprue, within a frame of strips of 30 thou card, and attached by a thick piece of rod to one of the square bases found in the Airfix Platform Fittings set. Painting was matt brown for wooden bodywork, matt black for the roof beams and bogies, Dunkelgrau for roof and searchlight, with silver for the glass. □



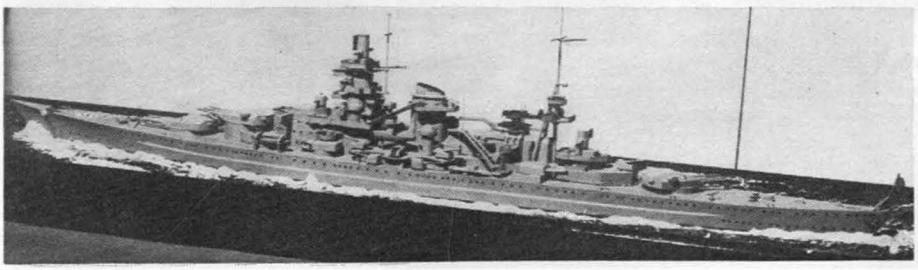
Present Arms '76

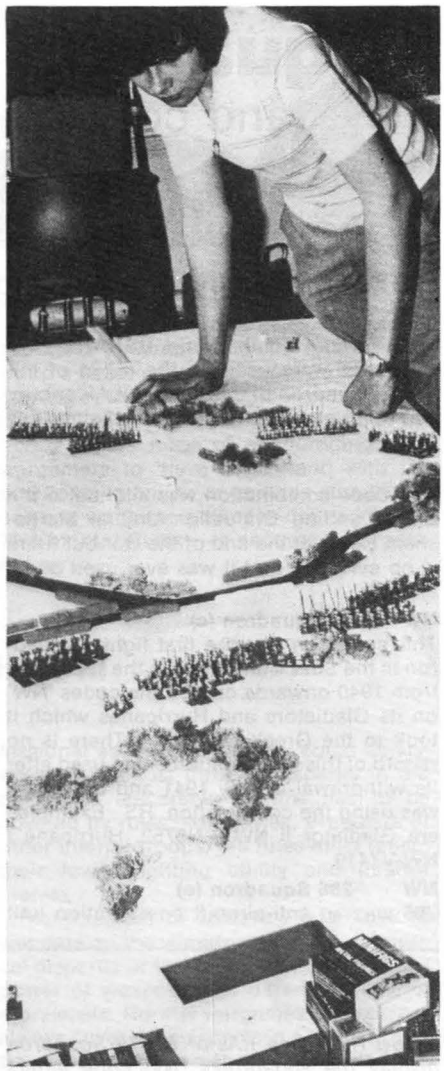
Report from Southend by **John Sandars**

ONCE AGAIN THE weekend May 15-16 was marked by 'Present Arms' at Rochford, near Southend; organised and run by the South East Essex clubs under the able direction of Ken Lazenbury. In a nutshell it was the mixture as before, only more so. A wide variety of games and displays by over 25 clubs, societies and individuals; painting and modelling competitions with over 200 entries, and of course a small but select group of trade stands were in evidence as usual. Such was the interest this year that a marquee had to be added to the extensive Rocheway Youth Centre buildings in order to cater for all the varied activities.

This pleasantly informal event thrives on the active participation of all who go to it, and is refreshingly free from the pressures and frustrations that tend to accompany commercial events of a broadly similar nature, or the high powered national competitions of the major societies and the wargames world. Although the public are admitted on the Sunday, and get a very good show for their money, it is essentially a get-together run for the benefit of modellers and wargamers, with the trade present in a supporting role. This year was no exception, and the high turnout both in clubs taking part and in competition entries, coupled with the smooth running of the organisation and the cheerful co-operation of all attending, made it the largest, and possibly also the best Present Arms to date. It is encouraging in view of the proliferation of military events, commercial and otherwise, in recent years that this, one of the earliest regular events of this type, is more than holding its own. □

Above *'Cherrypickers at war' — a scratch-built Humber Mk III armoured car which was part of a vehicle display put on by the author.* **Below** *Scharnhorst — one of several fine ship models by Roger Chesneau on the Essex IPMS stand.*





Top of page *30 mm Stadden figures by B. Gregory depicting the 41st Foot in 1751.* **Above** *Graham Towers ponders a move in an ECW wargame being staged by the Harold Wood wargamers.* **Below** *Cheerful Hinchliffe Zamora Regiment grenadier drummer in 75 mm scale from Steve Kemp.*

Squadron codes and colours 1939-56

By **Michael J. F. Bowyer** and **John D. Rawlings**

NV 92nd Bomb Group, USAAF (c)
NV codes were used on the B-17s of the 325th Squadron of this Group at Alconbury and Podington from January 1943 until July 1945.

NV
This code combination was allotted to the Blind Landing Evaluation Unit at Martlesham Heath at the end of the war but there is no evidence that it was ever used on its aircraft.

NW 33 Squadron (c)
This squadron was the first fighter squadron in the Suez Canal zone in the 1930s and from 1940 onwards carried the codes 'NW' on its Gladiators and Hurricanes which it took to the Greek campaign. There is no record of this combination being used after its withdrawal in May 1941 and by 1942 it was using the combination 'RS'. Examples are Gladiator II NW:C-N5752, Hurricane I NW-V7419.

NW 286 Squadron (c)
286 was an anti-aircraft co-operation unit based in the West Country (Exeter, Colerne, Filton, Winkleigh, Weston Zoyland) from November 1943 to 1946. It flew a variety of aircraft including Master IIs, Defiant IIs, Oxfords, Hurricane IVs. Examples are Defiant II NW:V-AA628, Oxford I NW:F-HN138.

NX 131 Squadron (c)
Formed in 1941 this squadron flew Spitfires in the UK up to November 1944, using the code combination 'NX'. It then went overseas with Spitfire VIIIs and Thunderbolts and it is believed that this code combination was still in use there until 131 was disbanded in December 1945. Examples are Spitfire IIA NX:P-P7698, VB NX:A-BM420, IX NX:U-MA848.

NX Central Fighter Establishment
Towards the end of, and after World War 2, the Central Fighter Establishment had several subsidiary units as part of its empire, one of which was the Fighter Leaders School. 'NX' was a code combination used by some of CFE's support aircraft, Master GT IIs and Martinet TT 1s, and it is believed that these particular aircraft were part of the FLS. Examples are Master GT II NX:D-DL224, Martinet TT I NX:M-HP487.

NY 1665 Heavy Conversion Unit
This HCU formed at Waterbeach from 1651 HCU in May 1943 and served until July 1946 when it became 1332 HTCU at Dishforth. From January 1944 it concentrated on training transport crews and one of the code combinations used, as far as is known only on its Stirling IVs, was 'NY', eg Stirling IV NY:X-LJ622.

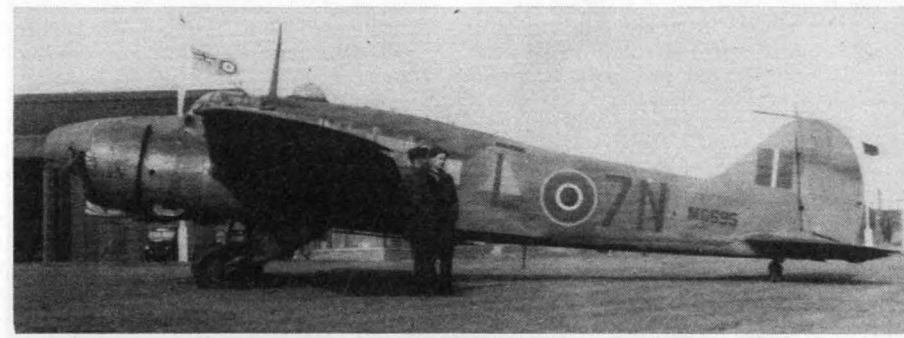
NZ 304 Squadron (c)
This code combination was used by 304 Squadron at least from the time it received Wellingtons at Bramcote in November 1940 until it transferred to Coastal Command in May 1942, an example being Wellington IC NZ-R1245.

N2 364th Fighter Group, USAAF
Carried by the P-38Js and P-51Ds of the 383rd Squadron of this Group from Honington between February 1944 and November 1945.

N3 344th Bomb Group, USAAF
Carried by the B-26Cs of the 496th Squadron of this Group from February 1944 to February 1946.

N4 Unknown
This code combination, used at one time on Warwick ASR 1 aircraft, has been quoted as 281 Squadron, but without confirmation.

N5 111th Tactical Recce Squadron, USAAF



Below *Hurricane IIAs of No 79 Squadron display the squadron's 'NV' code letters early in 1941* (IWM). **Right** *The Signals Flying Unit at Honiley used several different types of aircraft for signals development work. This Anson I, 7N:L-MG695, is seen at Burnaston in 1946.*

This code combination was used by a variety of aircraft of this unit in North Africa, Sicily and France in World War 2 until leaving France in December 1945.

N6 493rd Bomb Group, USAAF (c)
Carried by the B-17s of the 860th Squadron of this Group from April 1944 to August 1945.

N7 398th Bomb Group, USAAF (c)
Carried on the B-17s of the 601st Squadron of this Group from March 1943 to September 1945.

N7 Station Flight, Lyneham (c)
Allocation, confirmed, no details of its use.

N8 398th Bomb Group, USAAF (c)
Carried on the B-17s of the 600th Squadron of this Group from April 1944 to May 1945.

N8 Station Flight, Waterbeach (c)
Allocation confirmed, no details of its use.

N9 Station Flight, Buckeburg (c)
Allocation confirmed, no details of its use.

2N Station Flight, Foulsham (c)
A Spitfire IX MH349 was at one time coded '2N:N' but whether it belonged to this unit or not is not known; no other traces of this code's use by this unit have come to light.

2N 50th Fighter Group, USAAF (c)
Carried on the P-47s of the 81st Fighter Squadron of this Group.

4N 367th Fighter Group, USAAF (c)
Carried on the P-38s and P-47s of the 394th Fighter Squadron of this Group.

4N 486th Bomb Group, USAAF (c)
Carried on B-24s and B-17s of the 833rd Squadron of this Group from March 1944 to August 1945.

5N 38 Group Communications Flight (c)
This Group, based at Upavon in 1945, used this code on its aircraft. An example is Proctor III 5N:S-LZ 792.

6N 339th Fighter Group (c)
Carried by the P-51s of the 505th Squadron of this Group from April 1944 to October 1945.

7N Signals Flying Unit (c)
This unit, used for signals development flying and based at Honiley, carried '7N' on its aircraft in 1945 and 1946. Examples are Anson 7N:L-M9695, Wellington XIV 7N:O-NC887, Beaufighter X 7N:6-KW347.

9N 127 Squadron (c)
When 127 Squadron moved to the UK from the Middle East in 1944 its aircraft were allotted the new code combination '9N' and this was carried on its Spitfire IXs until disbandment at Oldenburg in April 1945, an example being 9N:Y-RR257.

OA No 22 Squadron (c)
No 22 Squadron carried the code letters 'OA' on its Beauforts from December 1939 at least until going to the Mediterranean in May 1942, an example being OA:L-L9838.

OA No 342 Squadron (c)
This code was re-allocated to No 342 Squadron, a Free French bomber squadron which was formed at West Raynham on April 7 1943 with Bostons and Havocs. These it kept, as part of 2 Group, until April 1945, re-equipping with Mitchells in March 1945 until December 1945 when it transferred to the French Air Force. Examples of its aircraft are Boston IIIA OA:S-BZ314; Boston IV OA:Q-BZ441; Mitchell II OA:W-FW181; Mitchell III OA:S-KJ729. □

Talking wargaming

First in a new series of articles by **Donald F. Featherstone**

Editor's introduction

THIS IS NOT principally a wargaming magazine by any means, but it is noticeable today that increasing numbers of modellers are also turning to wargaming. One reason for this is obvious — and is the same reason that I started wargaming several years ago: having assembled, converted and scratch-built a collection of AFVs and figures, for example, what can you do with them except watch them gather dust on the shelves? The answer is wargaming.

In this series of short articles on 'random thoughts', Donald Featherstone, the world's best-known and most prolific wargaming author, will offer, month by month, his own ideas on a variety of aspects of the hobby in the hope of encouraging non-wargamers to 'have a go', and with the additional intention of perhaps stimulating existing wargamers to consider new ideas. This month, Rules — a necessary wargaming evil.

Rules — a necessary wargaming evil

TO FIGHT A wargame one requires opposing forces, a table-top terrain and a set of principles to which action or procedure conforms or is bound and intended to conform — in other words, a set of rules! Perhaps the most fascinating peculiarity about the hobby of wargaming is that few wargamers find it possible to fight amicably to rules other than those of their own devising.

Possibly this is because the conditions applying in any specific wargame are almost entirely dependent upon the controlling wargamer's conception of tactics, the effect of firepower, the quality of troops and morale effects — as reflected in the rules governing the game.

The wargamer's concept of these factors arises from reading, films and hearsay, so it is unlikely that two wargamers will be so balanced in their reading, assessment and critical judgement as to agree!

For example, rules devoted to cavalry charges are far more likely to be realistic when their compiler actually rides horses than when the wargamer has no personal knowledge of the ability of the horse.

The rules that control a wargame usually reflect the character and temperament of their devisor and a dashing wargamer will formulate rules that allow for colourful charges and encourage aggression whereas the quiet and cautious man's rules will come down strongly on the side of dour defence and punishing firepower.

The wargamer, when confronted with rules he did not devise (even if commercially produced and play-tested) will adapt those rules to his own ideas and military concepts.

If rules are to provide realistic and fast-moving table-top reconstructions of warfare then certain facts must be borne in mind. First, he must accept (albeit unwillingly) that his little metal and plastic figures have only the fighting ability and morale that he bestows upon them and, where particular soldiers are known to be of inferior morale and fighting ability, he must devise rules to reproduce this.

Many battles, fought between sturdy professional soldiers of roughly equal ability, were won or lost through disparity in the quality of leadership — this has to be covered by rules; with levies, irregulars or other inferior troops, the rules must reflect their lower fighting ability and inferior morale.

Many factors of warfare are difficult to simulate on the wargames table — numerical disparity of forces, surprise, the varying power of weapons and differing states of morale, etc. Normal wargames rules do not always cover such aspects in a specific battle or campaign, so that realistic variants should be devised. On certain legendary occasions a commander took a calculated risk that came off, but are rarely possible under normal wargames rules — would your Napoleonic rules allow Captain Ramsay's guns to successfully charge cavalry as they did at Fuentes de Onoro on May 5 1811? Such difficult departures from the norm require rules to be slanted to accommodate them.

Commercially produced sets of rules are regularly advertised, perhaps the best known being those of the Wargames Research Group, who claim that 'great weight has been given to the characteristics of the different people that formed the warrior-types of Ancient armies so as to bring out their varying fighting qualities and reactions to stress.'

Sets of 'beginners' rules from Ancient to World War 2 are available from *Wargamer's Newsletter*. The majority of wargaming books embody rules or rule-suggestions in their pages. Magazines like *Wargamer's Newsletter, Slingshot* (The Society of Ancients) and *Arquebusier* (the Pike and Shot Society) regularly publish articles on rules and table-top battles illustrating their practical application.

Just as life is governed by laws and decrees, so must wargames be controlled by realistic and easily comprehended rules. Remember, a principle of wargaming is that your rules prevail in your house and you accept those of your host when fighting 'away'! □

NEW KITS AND MODELS

Heller warships

THE CHOICE OF 1:400 scale for a series of warship kits is a good one in many ways, for it should permit a great deal more detail, and greater scale fidelity to be shown, than would be possible with, say, 1:600 or 1:700 scale products. One is always left with the impression, however, that Heller kits fall a little short in these respects, since although they are of good quality and achieve a respectable standard of accuracy, they tend, for their size, to look somewhat bare and heavily moulded without some additional painstaking work by the modeller. The three most recent additions — *Surcouf, De Grasse* and *Prinz Eugen* — substantiate this opinion, but merely assembling the parts provided will certainly result in big and impressive models.

The *Surcouf* is a generally accurate rendering of this famous French corsair submarine, and includes a rotatable 8-inch turret, and a miniature Besson spotter plane and handling crane. The contours of the hull are well represented, and the waterline enthusiast may in this case wish to leave things as they are just for once in order to preserve the rather unusual underwater lines. The egress vents need some attention with a fine file, the forward shape of the turret is not rounded enough, and the gun barrel mouldings are decidedly thick, but component fit, whilst not perfect, is adequate, and detailing generally satisfactory for the scale.

The kit of the cruiser *De Grasse* is for a first-state configuration anti-aircraft ship with its interesting five-level arrangement of 127 mm and 57 mm twin mountings. It appears to be generally accurate, but in one or two areas the fit of the parts is not up to standard and some filing and packing with strip and filler is required. This is especially necessary around the sides of the decks, which are not precisely flush with the rather flimsy hull halves, and in the vicinity of the bridge, where there are gaps between the plating and the various vertical screens. Two areas where care is demanded are the forward bridge, where 'dry' fitting is recommended before final construction, and the foremast, where the multitude of radar antennae, etc, needs patient alignment. The usual lengths of deck rail are included with the kit, but although the manufacturer's intentions are praiseworthy, the result cannot be considered convincing.

Largest of the trio is the ever-popular *Prinz Eugen,* which, as one might expect, is a fairly complicated kit. Apart from a somewhat warped hull moulding, the usual problems with the hull/deck joint and some rather vicious ejection pin marks, the individual parts are well-moulded and fit together satisfactorily. The kit is definitely not in the 'snap-together' category — locating pins are hard to find, and some parts, notably the paired superstructure assemblies, have weak joints as a result. Principally for this reason, the kit cannot be recommended for beginners. General accuracy is good, but the way the close-range weapons are distributed makes it difficult to determine which period in the ship's career is represented; the enlarged foretop cupola, which was fitted to *Prinz Eugen* later in the war, is, however, included. The recommended painting scheme is a little confusing and of questionable accuracy, whilst embellishments in the form of printed paper flags and badges (the latter inappropriate) have been supplied rather than a decal sheet for the Arado floatplane which, one feels, would have been more useful.

Old Guard

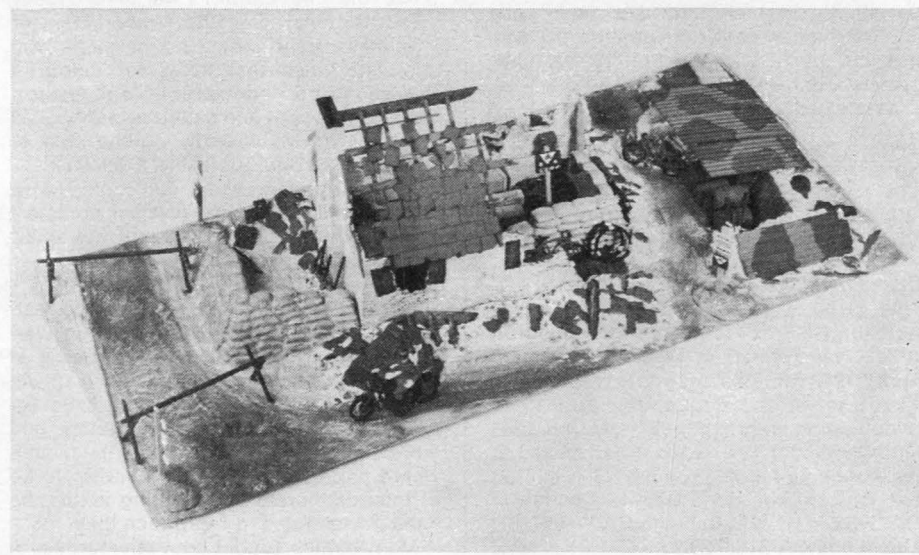
IN CASE English readers were not aware of it, New Hope Design, who advertise on page 664 of this issue, are the UK distributors of the range of beautiful figure and AFV models manufactured in America by Old Guard.

Having had a chance to examine some of the products of this manufacturer recently, we can only express surprise and delight at the quality.

The majority of figures are to 54 mm (1:32) scale, and range from a Spartan Hoplite, a variety of Roman legionaries and even some gladiators, through Vikings, Sumarai and Red Indians to American Revolutionary soldiers, Boer War and World War 2 types. Included are a number of delightful personality figures, including Robin Hood and Bonnie Prince Charlie. These figures come as kits which have to be assembled with epoxy resin, and range in price from about £1.20 up. The quality of the castings is superlative, with no 'flash' and, indeed, very little in the way of mould join lines to remove before assembly and painting can begin.

Continued on page 708

There wasn't room to illustrate them on page 669, but here below are the Airfix 1:35 scale Dodge M6 anti-tank gun and 1:76 scale Forward Command Post.



MODELTOYS

PLASTIC KIT SPECIALISTS——ASSOCIATE MEMBER I.P.M.S.

NITTO AFV KITS

Panther G	1/76	60p
Tiger I	1/76	60p
PzKpfw I	1/76	60p
PzKpfw II	1/76	60p
PzKpfw IV Ausf.J	1/76	60p
150 mm Nebellwerfer	1/76	60p
M36 Jackson	1/76	60p
M4A1 Sherman	1/76	60p
M3A1 Half-Track	1/76	60p
M7B1 105 mm S.P. Gun	1/76	60p
W. Jeep/Harley D.	1/76	60p
Sd. Kfz. 250/10	1/76	60p
Jagdpanther	1/76	60p
Pz.Kpfw III Ausf. M/N	1/76	60p

FUJIMI AFV KITS

T-34/76A	1/76	65p
Valentine	1/76	65p
M4A3 Sherman	1/76	65p
PzKpfw (38(t)	1/76	65p
88 mm Gun and Crew	1/76	65p
Matilda III	1/76	65p
Tiger II	1/76	65p
Jagd Panther Hetzer	1/76	65p
Jagdtiger	1/76	65p
251/1/10 Hanomag	1/76	65p
Sd. Kfz. 222 A. Car	1/76	65p
Chi-ha (Advanced)	1/76	65p
Jap Type I	1/76	65p
SU-85	1/76	65p
T34/85	1/76	65p
Kubelwagen and BMW R75 Combination	1/76	65p
Elephant	1/76	65p
Panzer I	1/76	65p
Panzer Jager	1/76	65p
Tents, Oil Drums, Walls, Sandbags, Footbridge	1/76	65p

HELLER AFV KITS

AMX13 with 105 mm gun	1/72	70p
AMX30 with 105 mm gun	1/72	70p

HASEGAWA AFV KITS

1.	Willys Jeep	1/72	45p
2.	155 mm M.2 Gun	1/72	45p
3.	Stuart Mk. I	1/72	45p
4.	M3 Lee Mk. I	1/72	45p
5.	M3 Grant Mk. I	1/72	45p
6.	M3A1 H. Track	1/72	45p
7.	M4A-I H. Track	1/72	45p
8.	Tiger I.E.	1/72	45p
9.	Panther G.	1/72	45p
10.	88 mm Flak 18	1/72	45p
11.	Sd. Kfz 7 H. Track	1/72	45p
12.	Kubelwagen and BMW Combination	1/72	45p
13.	Schwimmwagen and Kettenkrad	1/72	45p
14.	Sd. Kfz 7/1 with 4AA	1/72	45p
15.	M-4 (A3E8) Sherman	1/72	45p
16.	TX-40 Fuel Truck	1/72	45p
17.	Toyota Starter Truck	1/72	45p
18.	Sd. Kfz 7/2 37 mm AA	1/72	45p
19.	M-24 Chaffee	1/72	45p
20.	G.M.C. Personnel C.	1/72	45p
21.	G.M.C. Gas Truck	1/72	45p
22.	G.M.C. Dump Truck	1/72	45p
23.	M5 Tractor	1/72	45p
24.	Daimler II A. Car	1/72	45p
25.	Humber II A. Car	1/72	45p
26.	Crusader Mk. III	1/72	45p
27.	Churchill Mk. Vii	1/72	45p
28.	Leopold Rail Gun	1/72	£1.95

ESCI AFV KITS

PzKpfw 111 Ausf M	1/72	60p
Sd. Kfz 251/1 Hanomag	1/72	60p
PzKpfw II Ausf.F	1/72	60p
PzKpfw VI King Tiger	1/72	60p
PzKpfw IV.Ausf.H	1/72	60p
PzKpfw V Panther	1/72	60p
PzJG V JAGD Panther	1/72	60p
M4A1 Sherman	1/72	60p
M-12 Gun Carriage	1/72	60p
Wespe	1/72	60p
Hummel	1/72	60p
Hetzer	1/72	60p
Marder III	1/72	60p
PzKpfw III N/M	1/72	60p
Sd. Kfz. II H. Track	1/72	60p
Opel Ambulance	1/72	60p
PAK 40, PAK 35/36 A.A. Flak 38	1/72	60p
Jagdpanzer IV	1/72	60p
Elephant	1/72	60p
3 Ton Opel Blitz	1/72	60p
Sd. Kfz. 251/1 Rocket Launcher	1/72	60p
Pz.JG. VI Jagdtiger	1/72	60p
Sturmgeschutz III Ausf.G.	1/72	60p
Russian KV-1c	1/72	60p
Matilda II	1/72	60p
Fiat Ansaldo M13/40	1/72	60p
Fiat Ansaldo 75/18	1/72	60p
British Daud Tractor	1/72	60p
25 lb Gun and Crew	1/72	60p
Afrika Korps Figs. 21 pieces	1/72	60p
8th Army Figs. 18 plus Field Gun	1/72	60p

SUPERMODEL A/C KITS

Macchi MC. 202	1/72	65p
Macchi MC. 205	1/72	65p
Reggiane RE-2000	1/72	65p
Reggiane RE-2001	1/72	65p
Reggiane RE-2002	1/72	65p
Fiat G 55S Silurante	1/72	65p
Fiat CR.32	1/72	65p
S.M. 81 Pipistrello	1/72	£1.95
Cant Z1007 Single Fin	1/72	£1.95
Cant Z1007 Twin Fin	1/72	£1.95

REVELL A/C KITS

N. Ki-49 Helen	1/72	£3.35
M. Ki-21 Sally	1/72	£3.35
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16. USAF-S.E. Asia (2): F-4E Phantom, 34 TFS, 288 TFW, Cessna 0-2A 23 TASS. AC-47 432 TRW, and USMC OV-10A Bronco, HLM-267.
17. T-33, RCAF; F-35 Draken Danish Air Force; Mosquito FB VI, 4 Sqn. RAF. Skyhawk, RAN, and A-4K squadron markings for 75 Sqn., RNZAF.
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20. H.S. Buccaneer S.2's, 800 and 809 Sqns., F.A.A.; NF-5A Freedom Fighter, 314 or 315 Sqn., Dutch Air Force, and L-20A Beaver, Dutch Air Force.
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22. A-7D Corsairs, 356 TFS, 354 TFW., 40 TFS, 355 TFW., with alternative decals for 357 TFS, 355 TFW; T-33A, 50 TFW., and F-86A Sabre, 116 FIS.
23. Phantom F.G.1, 43 Sqn. Harrier G.R.1A, 3 Sqn. Lightning F.2A, 92 Sqn. All RAF. CF104 Starfighter 421 Sqn. C.A.F.
24. RAF Hunter F.6. 79 Sqn. Phantom F.G.R.2 41 Sqn. Sea Venom F.A.W.21 809 Sqn. Sea Venom F.A.W.21 890 Sqn. F.A.A. Wyvern S.4. 831 Sqn. F.A.A.
25. Lightning F.2A, 19 Sqn., Canberra B(1)8 16 Sqn., Harvard T.2B, 500 Sqn. Hunter FGA.9. 45 Sqn. All RAF.
26. Buccaneer S2B. 15 Sqn. Hunter FGA.9. 58 Sqn., Canberra B.2 10 Sqn., Gazelle C.F.S. All RAF-R.N. Gazelle HT2.
27. Canberra T4, 231 OCU, RAF, Cottesmore 1974, Hunter T7. 4TFS, RAF, 1973 (or 56 Sqn. 1962). Phantom FGR.2, 111 Sqn. RAF, Coningsby, 1974. Buccaneer S2A, 208 Sqn. RAF Honington, 1974.
28. Canberra E15, 98 Sqn. RAF, 1974. Hunter T8. 764 Sqn. FAA, 1964. Lightning F3, 29 Sqn. RAF, 1971. Jet Provost T5, 3FTS. "The Swords" RAF Leeming, 1974. (Serials provided to make any one of Team).
29. BAC-SEP Jaguar GR1, 14 Sqn. RAF, 1975. BAC-SEP Jaguar T.2, 14 Sqn. RAF, 1975. Rep. F-84F Thunderstreak, 314 Sqn. Dutch A/F. Rep. RF-84F Thunderflash, 717 Sqn, Norwegian A/F. L. C-130H. Hercules, 721 Sqn, Danish A/F, 1975.
30. G. US-2N Tracker, 320 Sqn, Dutch Naval A/S. G. Javelin FAW.8. Can be finished for either 41 Sqn. RAF or 85 Sqn. RAF, 1963. BAC-SEP Jaguar GR1, 17 Sqn, RAF, 1975. BAC-SEP. Jaguar T.2, 17 Sqn, RAF, 1975. Phantom FGR.2, 29 Sqn, RAF, 1975.
31. H. Fury I. K5673, 1 Sqn, RAF, Tangmere, 1937. B. Bulldog IIA. K2151, 23 Sqn. RAF Kenley, 1932. G. Gladiator I. K8027, 87 Sqn, RAF, Debden, 1938. A.W. Siskin IIIA. J8959, 43 Sqn, RAF, Tangmere, 1930.
32. H.S. Sea Vixen FAW.2. XP923, 766 Sqn, FAA, May 1968, or 890 Sqn, FAA, Sept, 1968. Additional emblems and part serials included also for machines of 892, 893, 899 Sqns, and R.N.A.Y. Sydenham. Super Mystere B2, E.C.2/12 L'Armee de l'Air, 1971. F-100D Super Sabre, 727 Sqn, R. Danish A/F. 1973. Sepecat Jaguar A or E, 7 Esc. L'Armee De l'Air, 74-75.

'MODELDECAL' style fully illustrated instruction sheet, giving decal locations and full-colour scheme details, is included with all Modeldecal decals, and commencing with set No. 17, a selection of photographs is also included.

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Revell, who already market the Italian Italaerei range of kits in five other countries, have now signed an agreement whereby they will market them in the UK also. The Italaerei range of 1:35 scale AFVs are rightly renowned for their high quality and this marketing agreement is obviously an advantageous one for Revell (GB) Ltd who will now be able to reap the benefits from a quality range at reasonable prices. To introduce the new arrangement, Revell/Italaerei will be releasing four new kits — a British Crusader III, German PzKpfw I, German Maultier half-track and a set of six German tank crew figures, all of which are pictured here.

Besides these, New Hope Design also handle the GHQ range of micro-tanks in 1:285 scale which are widely acclaimed as the 'ultimate' in this small size. The detail on them is quite unbelievable, standing scrutiny under a powerful magnifying glass; and although they are more expensive than most competitors' products in comparable scales, many wargamers will accept this in return for the extra authenticity they confer upon a wargames table.

The range, unfortunately, is rather limited, comprising only slightly over 70 items at the time of writing. The Germans, as in most manufacturers' ranges, are particularly well covered, other nationalities less so, and there are several anomalies, such as the inclusion of Crusader Mks I, II and III in the range but no Churchill VII or VIII and no Cromwell; only two Sherman variants, and so on, although new releases do appear quite frequently and these remarks may be out of date by the time this review appears in print.

What is particularly outstanding about this range of models is the fact that they are normally cast in at least two components and frequently more, so that tank turrets can traverse, etc. A 20p postal order to New Hope Design, Rothbury, Morpeth, Northumberland, will bring you a complete list and a sample Tiger 1.

LS kits

IT TOOK ALMOST eight years and two semi-duds, but the Japanese firm of LS seems to have found their old place in the sun and moved back in.

A little more than a year ago modellers who remembered LS's old Rufe, Nell and Peggy kits, trend-setters a decade ago, were excited to hear of the impending release of a new kit by that manufacturer. The release turned out to be a bit of a let-down and a bit of a delight. The kit was of the Judy dive bomber and there were actually two kits, one with in-line engine, the other with radial engine. Except for the engine area, both kits were identical and most modellers were left with the feeling that a single kit with optional parts would have been a much more acceptable effort. While the kit(s) did offer a much better example of the Judy than the previous effort (LS had released a 1:75 scale in-line Judy a dozen years back) there were disturbing similarities with the ancient offering. While closer to scale, markings were still in evidence pressed into the plastic, crudeness was still evident and the cockpit canopy was even worse than the decade-old example in shape, if not in clarity. In all, a disappointing kit.

Next came another 'double' offering, another which could have been included in one kit with optional parts. This time the topic was absolutely new to the 1:72 scale modeller, the Yokosuka K5Y Willow trainer offered with either floats or standard landing gear. A better offering, the Willow suffered from a too-round fuselage and resembled a Stearman more than a Willow in some respects. Better, but still disappointing.

Christmas 1975 brought a Japanese Christmas present, or, rather, four presents. Again LS overdoes the packaging with four kits where one or even two would have sufficed, but quality has taken a big leap. The subject is the Mitsubishi Ki46 Dinah, one of the most graceful aircraft ever to take to the sky. Until now only Airfix has offered this aircraft in 1:72 scale and this kit is getting rather old. LS's new offerings are crisp, well detailed and attractive and they benefit from excellent surface detail which really catches the eye.

The most basic question in building a plastic model airplane kit is: 'Can a replica of the original be made from this kit without an undue amount of correction?' With these kits the answer is yes, with small reservations and a few notes. All four kits feature identical fuselages and wings which are designed to take the components for each variant. Engines, interior, undercart, airscrews, spinners and horizontal stabilizers are identical to each kit. Horrible little crew figures are also supplied and would make good plastic to melt down for stretched sprue.

Using the four basic kits, the following variants are possible:

Kit No 1. Mitsubishi Ki 46-II Dinah. This may be considered as the basic Dinah kit and is identical to the old Airfix offering.

Kit No 4. Mitsubishi Ki 46-II Dinah trainer. Only the forward canopy section is different in this kit. The 'hump-back' canopy has been done quite well, but no interior has been provided for the instructor's position. References on this variant are scarce.

Kit No 2. Mitsubishi Ki 46-III Dinah. While a reasonable, attractive example of this type may be built from the kit, there are a number of errors which prevent an accurate replica from being built without corrections. This is the 'Jimmy Durante' variant, so-called because of the large glassed-in nose section. As far as it goes, this is a very nice kit, but it does not go far enough. The long glass nose is provided along with the necessary lower section of the nose. The rear cockpit enclosure, which differed from the Ki 46-II variant in having different framing, has been well duplicated.

The problem lies in the entire engine nacelle area. The Ki 46-III had a much larger rear nacelle which shows up in photos as a bulge toward the trailing edge of the wing. Engine cowlings were larger than on the -II and the single large exhaust pipe was replaced with sets of stub exhausts. The spinner was slightly larger and, on some variants, the starting stub was absent. None of these features have been captured by LS. A slight attempt at showing the difference has been shown with a new lower rear nacelle section, but this does little to improve the appearance.

Kit No 3. Mitsubishi Ki 46-III Kai interceptor. Much of the same can be said of this kit as for No 2. Again, the distinctive cockpit canopy has been reproduced (this aircraft featured a forward section which resembled a streamlined version of the -II's windscreen and a rear section taken directly from the -III), the rear cockpit enclosure as for the -III. The same mistake has been made in deleting the new rear nacelle area, but an attempt has been made to reproduce the exhaust system of the -III. While the engine cowlings are not of the larger size, the stubs are there and this part may be used on the standard Ki 46-III kit to assist in accuracy. A new nose has been provided to take the 20 mm guns and a 37 mm oblique gun has been provided. The latter was not always carried. It should be noted that some Ki 46-III Kais had the earlier -II spinners while others had the larger spinner either with or without the starting stub.

This feature was supplied by Tom Young, editor of the American magazine *Model-Aire International.*

BOOKS FOR MODELLERS

Aviation

P-38 Lightning in action, by Don Greer. Squadron/Signal Publications Inc, 3461 E. Ten Mile Road, Warren, Michigan 48091, USA. **$3.95.**

NO 25 IN THE Squadron/Signal 'In Action' series covers the famous twin-boomed Lockheed fighter and is sure to be a hit among those who find this aircraft and American fighters in general of interest.

It would not be unfair to compare these publications with our own home-grown Profiles which were much admired when they were in full-scale production. The American book comes out slightly on top but it must be remembered that it is a lot more expensive and probably has a greater budget per issue than ever Profile enjoyed.

This book follows the same pattern as others in the series with a splendid collection of photographs showing Lightnings in all their various forms as well as personnel, component parts, combat shots and individual markings. The text is very readable and a nice touch is the inclusion throughout the book of unit identifying codes and tail markings, all of which are related to a colour key which appears in the front.

Don Greer is the artist concerned with this particular publication and his double page centre-spread contains colour profiles of eight aircraft, which are supplemented by a further two on the outside of the rear cover whilst the front cover has on it a fine painting of a P38L of the 459th Fighter Squadron which would make an attractive modelling subject.

Fighter Pilot on the Western Front, by Wing Commander E. D. Crundall DFC, AFC. William Kimber & Co Ltd, Godolphin House, 2A Queen Anne's Gate, London SW1. **Price £3.95.**

EDWARD DUNCAN CRUNDALL joined the RNAS in June 1916 and his book tells of his experiences until demobilised in 1919. After the first chapter on his training experiences the rest of the book is in the form of a diary of his activities with 8 Squadron RNAS and 210 Squadron RAF in World War 1. The day-to-day alternatively boring and hectic life of a pilot on front line duty and on leave with its contrasts of fun and games and tragedy are thus brought home to the reader far better than is usual in books of 'wartime experiences' which normally dwell only on the bright spots and action. Some 58 photographs of aircraft, both Allied and enemy, and personalities and colleagues of the author, illustrate this account — some are from the author's collection, others being contributed by Chaz Bowyer, who wrote the introduction and other notes.

Goggles, Helmets and Airmail Stamps, by Georgette Vachon, translated by Mary Downey. Published by Books Canada Ltd, 1 Bedford Place, London N2. **Price $8.50.**

GEORGETTE VACHON, wife of Romeo Vachon, a Canadian pioneer pilot, has written this 'petite histoire' of pioneer aviation in Canada, a subject with which she has been connected for some 50 years. Probably this book has lost something in the translation from the original French as this edition is written in the style of an early 'boys comic', full of 'astounded the spectators with a dazzling display of upside down flying, loop-the-loops and falling-leaf rolls' or 'This bold and fearless aviator was nicknamed the Red Baron, after the colour of his plane, which he manoeuvred like a bird of prey, shooting down eighty Allied planes'. Not a style of writing likely to appeal to the modern student of aeronautical history — there are however some nice photographs illustrating Georgette Vachon's book.

Military

After the Battle, No 11: German Spies in Britain, edited by Winston G. Ramsey. Battle of Britain Prints International Limited, 3 Plaistow Road, Stratford, London E15 3JA. **Price 75p.**

THE LATEST issue of the quarterly magazine *After the Battle* is principally concerned with German spies in Britain during the two World Wars. Although, not surprisingly, World War 2 is covered in much more detail, it is an interesting production and includes many 'then-and-now' photos, as well as fascinating two-page list of double-cross agents. On the whole, the magazine concentrates on the unlucky 16 German spies who were captured and executed in the last war. One of the really surprising aspects is the amateurishness of the agents: the ways they were caught for instance — going into a pub for a drink before opening time, and having an identity card filled in with obviously continental-style writing. Some carried German Mauser automatics and some even had pieces of German sausage on them! All this makes interesting reading, although perhaps its might be a bit morbid for some tastes: for example the photo of the white lint target worn by Josef Jakobs at his execution, and the colour photo on the cover of the grave of Carl Hans Lody.

However, the editor has really done his job well, and has devoted a huge amount of time and effort to research and investigation. Perhaps it might have been more interesting to have given more space to the double-cross agents, but of course this was covered in depth in Sir John Masterman's classic book. Other contents include a lovely double-page colour picture of a restored Kubelwagen, an article on shipwrecks, and an interesting feature on Major Clark Gable and the part he played in the war.

Assault from the sea 1939-45, by J. D. Ladd. David & Charles Ltd, South Devon House, Newton Abbot, Devon. **Price £5.95.**

THIS BOOK IS devoted to amphibious assault operations during the last war and will prove invaluable to military historians and wargamers. It describes not only the techniques of beach assault, including pre-invasion survey work and the demolition of beach obstacles, but most importantly goes into great depth on the different types of American, British, German and Japanese landing craft and ships, amphibious vehicles, including DD tanks and DUKWs, and support ships. These are complemented by numerous photographs and scale plans of selected types which are ideal for warship modellers.

Basically a reference work rather than a narrative history, the book does not go into any great detail on specific amphibious assaults, but instead draws on a wide number of examples, from D-Day to Okinawa, to make its points about the tactics of invasion. The book is not cheap for what it is, but since it is the only reference work of its kind it will undoubtedly prove popular.

Dropzone Normandy, by Napier Crookenden. Ian Allan Ltd, Terminal House, Shepperton, TW17 8AS. **Price £4.95.**

THIS BOOK FORMS an ideal complement to that reviewed above since it deals in great depth with the airborne parachute and glider landings made on the French mainland in support of the D-Day landings on June 6 1944. The author, Lieutenant General Napier Crookenden, who himself participated in 6th Airborne Division's drop, is the ideal author for such a book, and well brings home the tension and atmosphere of airborne operations.

Beginning with introductory chapters on the formation of the British and American airborne forces prior to D-Day, he then goes on to consider the activities of the British 6th and US 82nd and 101st Airborne Divisions on that fateful day, German countermeasures, and the final results. The end product is an absorbing book of immense interest to all students of the last war, and wargamers, who will find the numerous photos and maps worthy of special study.

Railways

Roaming the Northern Rails, by Eric Treacy. Ian Allan Ltd, Terminal House, Shepperton, TW17 8AS. **Price £5.95.**

A PHOTOGRAPHIC autobiography of Eric Treacy, the well-known railway photographer, this book is a departure from most photo essays in that it covers not only steam but diesel and electric operation of several main lines in Northern Britain. Divided into 12 sections, the book covers most main lines north of Crewe, and several branch lines, including the preserved Keighley and Worth Valley, North Yorks Moors Railway, and Steamtown, Carnforth. Spectacular photographs of all types of steam locomotives and the familiar diesel classes in their pre-renumbering days capture the individual atmospheres of each section, whether it be an A4 Pacific storming out of Edinburgh Waverley, a Princess

on Shap or an ex-Coal Board engine slowly chugging along the North Yorks Moors Railway. Thoroughly recommended.

The Great Way West, by David St John Thomas. David & Charles, South Devon House, Newton Abbot, Devon. **Price £4.50.**

SUBTITLED 'The History and Romance of the Great Western's Route to the West', this book is basically a pictorial essay of the London to Penzance main line. David St John Thomas covers each section in a potted history, and discusses the ups and downs of operation of the line before we reach the comprehensive illustrations. Again, the illustrations are arranged in the order London-Penzance, and come from all periods, including the broad-gauge era. Being published from Newton Abbot, the book naturally covers the South Devon line in detail, illustrated by Victorian engravings and with a section on the atmospheric system of propulsion. The spectacular coastal section is extensively covered, including two accidents 60 years apart. Further on, the Royal Albert Bridge at Saltash is shown, from the cab of a diesel multiple unit, and under construction in the late 1850s. Finally, Cornwall, where there has never to this day been a fatal rail crash.

The book is excellently illustrated throughout, each photograph or engraving telling its own story. Finally, there is a route map for the whole line, with a chronology and track profiles, essential reading for any Great Western enthusiast.

Motoring

The Observer's Book of Motor Sport, by Graham Macbeth. Frederick Warne & Co Ltd, 40 Bedford Square, London WC1B 3HE. **Price 75p.**

THE OBSERVER BOOKS, of which there are now more than 50 different titles, have long been renowned both for their exceptional value for money and for their astonishing ability successfully to cram the proverbial quart into a convenient pocket-size pint pot, and this recently published addition is no exception.

Written by an author who knows his subject inside out, there are 192 hard-bound pages, with 57 photos and 39 diagrams. Inside, you will find sections dealing with: the history of the sport, development of the competition car, Grand Prix formulae, current racing car formulae (ever a changing scene, and already the book's contents are unavoidably partly out of date here in view of the changed 1976 regulations), classic racing cars, classic races, great racing drivers, the organisation of motor sport, racing circuits of the world, the World Championship of Drivers 1950-75, and other forms of motor sport. There is also a useful index.

There is no shortage of books on motor sport, but if you seek a low-priced primer because your interest in the subject has just been sparked-off, then this should certainly be top of your shopping list. As the late Graham Hill (from whose sad loss the sport will take a long time to recover) says in his Foreword, 'It is a small book but I can't think of anything else comparable in price or size which packs in so much information'. No one will disagree with that.

LETTERS TO THE EDITOR

Camouflaged A-4

I WONDER whether any of your readers can solve a small puzzle raised by a photograph which I have recently seen?

Though usually an aircraft modeller, I was looking recently at one of the 'Ship Profiles' on the USS *Enterprise.* In this Profile is an intriguing photo of an A-4 taxiing past a row of similar aircraft. Most of the aircraft are in the usual grey/white finish but the moving aircraft is sprayed in a dark green which appears to obliterate all markings save for 'ministars.' The paint is ultra-matt and looks in tonal value near the darker green of the standard SE Asia USAF camouflage. The rough edges to the camouflage make me think this was a local modification.

Does anybody know anything about the reason for this paint scheme? Bill Gunston's book on Attack Aircraft mentions camouflaged A-4s but I have never seen another photograph of one in this scheme. The photo is dated March 30 1966. I'd be very interested to know of other information on this scheme and the tactical reasons for employing it on some aircraft — I'd guess at FAC.

David Hart, Newcastle upon Tyne.

Graf Spee

BEING A KEEN modeller for almost 18 years, I was recently asked by a friend to build a model of the pocket battleship *Admiral Graf Spee* from the Airfix 1:600 scale kit.

The *Graf Spee* has a special appeal to we Uruguayan modellers because it was scuttled in our home waters in 1939 after the famous Battle of the River Plate, and I enclose a photograph taken of her by my father on the day before her end (December 17) which clearly shows the chipped camouflage paint. Modellers building a waterline replica of the *Graf Spee* may wish to reproduce this effect.

Daniel Lombide, Montevideo, Uruguay.

Figure conversions

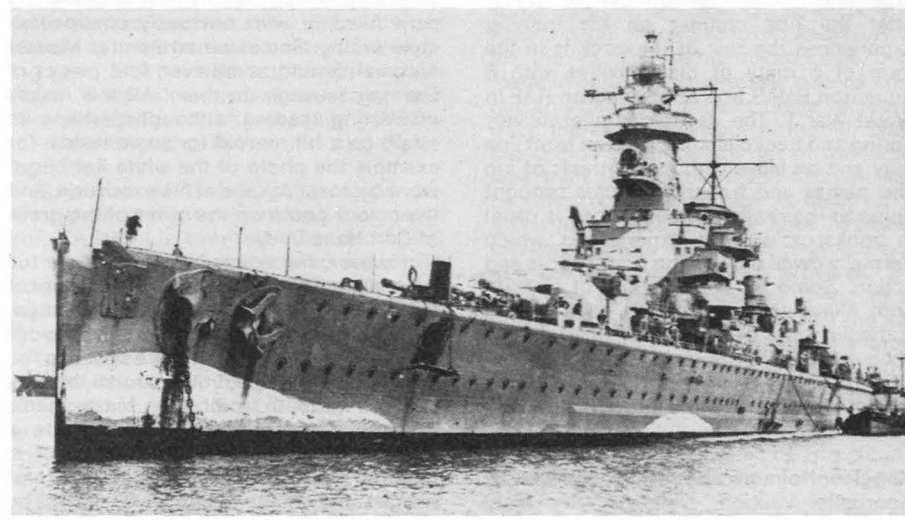
CONGRATULATIONS to Martin Windrow and Gerry Embleton for their excellent series of articles on Peninsular War and North American figure conversions. I had only just started figure modelling when the former series commenced, and now I am hooked!

Having worked through most of their suggestions up to the end of last year, I have one or two comments that may be of interest to other readers who followed the articles.

Brunswick jager — as Messrs Windrow and Embleton point out, the width of the lapels and size of buttons on the jacket of the American Soldier used for this conversion are incorrect. I found that a less drastic method of dealing with the problem than filing down the lapels and adding new ones from plastic card was simply to remove all the buttons and add new, smaller, ones in the positions described, but near the outer edge of the lapel. If anyone should care to measure the model they may spot the difference in scale, but the point is that it looks OK.

Spanish line grenadier — maybe my hand is not too steady, but I had some trouble cutting the cords at the top of the shako to obtain the tied bow described. After making a mess of two shakos (not wasted, fortunately, as I need them without cords for other models), I used slivers of plastic card instead and obtained the desired effect with no trouble. I hope this may save someone without my ready supply of Rifleman kits a great deal of frustration!

Incidentally, most of the pictures which I have seen of Spanish infantry of the period show the chin tapes running vertically up the sides of the shako and tied in the centre of the top. Presumably this was the regulation arrangement for the parade ground (?), but the positioning described by



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Opinions expressed by correspondents on this page are their own and do not necessarily reflect the views of the Editor or Airfix Products Ltd.

Messrs Windrow and Embleton seems a more likely one for campaigning, since the tapes would be less likely to slip. If anyone wants to go by what seems to be the majority of sources, however, it would be a simple job to file off the cords completely and add new ones from card.

Simon Gibson, Chatham, Kent.

(Other readers who enjoyed Martin and Gerry's series will be pleased to hear that this dynamic duo have now written a book in our Airfix Magazine Guide series. Called *Model Soldiers,* it includes a fantastic selection of conversion ideas, including some from the new Multipose, Bengal Lancer and French Foreign Legionnaire kits, and will be available later this year. **Ed.**)

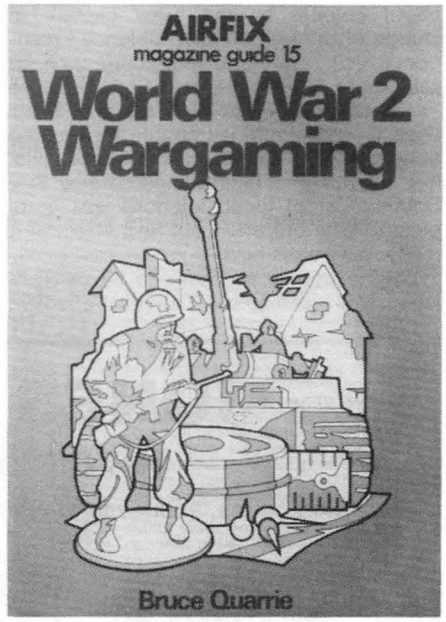
Fortifications

THE ARTICLES on inland fortifications by Terry Wise interested me because towards the end of 1941 I was stationed at RAF Binbrook and was taken off my own job to go and work on gun posts which were being put up around the perimeter.

One of these was hexagonal such as that shown in Fig 7 on page 398 of the March issue and the other one was rectangular about the size of the main rectangular portion of that shown in Fig 2 on page 396. The rectangular one had a rough ridge roof fixed over it on a framework of short scaffold poles. The brick structure was camouflaged in greens and browns and on this another airman and myself had to paint the various views of a farm cart. These were similar to the boxes sweets or children's slippers come in with side views on the main sides, back view on one small end and front view on the other. When asked

Continued on page 712

Armoured and infantry combat in miniature



Airfix Magazine Guide 15

World War 2 Wargaming

by Bruce Quarrie

The Second World War is undoubtedly one of the most popular periods with wargamers of all ages, partly due to the wide variety of guns and vehicles used, partly because of its truly international flavour, and partly due to the cheap and easy availability of model figures and tanks in the Airfix range.

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about colours by the army captain in charge of the unit on local defence I mentioned using blue and red, whereupon he said most farm carts he had seen were 'mook-coloured'. I pointed out that if we used these colours we should be wasting our time for the painted cart would be invisible against the camouflaged walls. The Commander of local defences was quite pleased with our effort but how effective it really was I can't say!

The hexagonal post was to be camouflaged as a water tower. The most effective way to have done this would have been to erect a proper tank on the roof of the brick post but this was not the official view. A framework of scaffold poles was erected around this structure, braced with galvanized clothes line wire and on this framework was nailed latrine canvas which had been treated in the first place with glue size and then it was given two coats of washable water paint. Part was done brick red to represent brickwork (!) and this covered most of the brick gunpost and then the top was done slate grey to represent galvanized iron. How long this structure remained when the east winds came in off the North Sea I could not hazard a guess, but I should imagine that it was about as long as the army took to put it up.

Nothing done there was in any way comparable to the examples shown in these articles. No matter what one thought, AC1s did not argue with captains and lieutenants in the army.

Trust these few notes may interest others.

John Lang, Street, Somerset.

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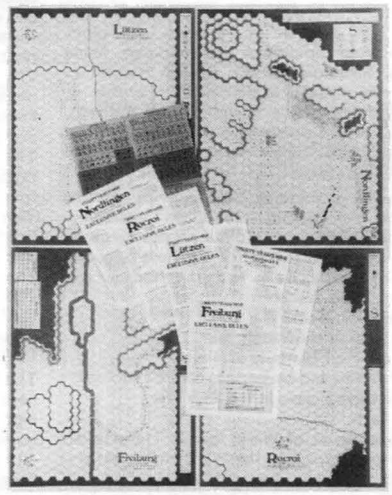

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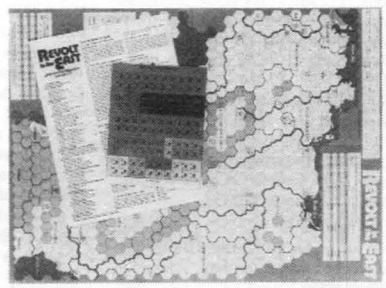

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SdKfz 11 Tractor
SdKfz 7 Tractor
3.7 cm Flak on SdKfz 7
Pak 35/36
Pak 38
Pak 40
Pak 43/41
Pak 43 8.8 on cruc. trail
7.62 Pak 36 (r)
10.5 cm howitzer
15 cm howitzer
17 cm howitzer
8.8 Flak
7.5 cm G36 mountain gun
7.5 cm infantry gun
15 cm infantry gun
Nebelwerfer
Karl tracked mortar (15p)

USSR
T34/76B
T34/76D
T34/85
KV1
KV2
SU 85
SU 100
T35
T28
JS II
JS III
ISU 152
T-26B
BA-10
BA-32
T-70
BA-64
GAZ-AAA
GAZ-60
JAG-12
GAZ-67 (6p)
Katyusha on Studebaker
Katyusha on GAZ
M42 45 mm AT
M41 57 mm AT
M44 100 mm AT
M39 76.2 mm
M37 122 mm howitzer
152 mm howitzer
203 mm tracked howitzer
SU 76
SU-37-1
Komsomlets
Stalinets
BT-7

UK
Honey
Grant
Sherman M4A1
Firefly
Matilda
Valentine II
Valentine IX
Archer
Bishop
Churchill III
Churchill SBG Bridgelayer (10p)
Churchill AVRE (10p)
Churchill Crocodile (10p)
Churchill Arc (10p)
Ram Kangaroo
A9
A10
A13
Crusader I
Crusader III
Cromwell
Comet
Challenger
Sherman Crab (10p)
Sherman DD (10p)
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Humber A/C
Daimler S/C
Scorpion Flail
Daimler A/C
Universal Carrier
Sexton
Wasp flame thrower
ACV Dorchester
ACV ALC
6 pdr
17 pdr
25 pdr
2 pdr
5.5 in howitzer
7.2 in howitzer
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Chevrolet 15 cwt
Chevrolet 3 ton

USA
M3 Stuart
M5 Stuart
M24 Chaffee
M18 Hellcat
M4A3 Sherman
M4A3E2
M4A3E8
M4A1 dozer
M10
M36
M26 Pershing
M7B1 Priest
M12 155 mm
M3 ½-track
T19 105 mm
M3 75 mm GMC
Jeep (6p)
LVT Buffalo
Greyhound M8
Studebaker 2½ ton
3 in AT gun
75 mm Pack howitzer
105 mm howitzer
155 mm Long Tom
M16 SPAA
Weasel
M-4 HS Tractor
Dodge Weapons Carrier

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Soviet
T-70
T-62
T-55
T-55 dozer
T-55 mine clearer
T-10M
PT-76
BMP-76PB
BTR-40P with swatter
BTR-60PB
BRDM-2
BRDM-2 with sagger
ASU-85
UAZ-469
BM 21 rocket launcher
ZSU-23-4
ZSU-57-2
D-30 122 mm gun
152 mm M-1955 howitzer
M-55 100 mm AT
Mil Mi-24 (hind) (15p)
Sukhoi Su-7 (15p)
BTR-50
BMD Para-APC
BM-14 RL
GAZ-69
Gainful
URAL 375

USA
M60A1
M60A2
M551 Sheridan
M113
M163 Vulcan
M114
M109
M728 CEV
Commando
XR311
M41 Walker Bulldog
M42 Duster
M60 dozer
M113 + recoilless rifle
Jeep + recoilless rifle
M110
M548
Iroquois (15p)
Huey Cobra (15p)
Skyhawk (15p)
Israeli Super-Sherman

Swedish
S-tank
1kv 91

UK
Chieftain
Centurion
Centurion AVRE
FV432
FV438 Swingfire
Abbot
Saladin
Saracen
Fox
Ferret
Ferret 2/6
Scorpion
Scimitar
Striker
Rapier
Jaguar (15p)
Spartan
FV432 + Wombat

German
Leopard A1
Leopard A2
Leopard A4
Marder
Gepard
Jagdpanzer Rakete
Jagdpanzer Kanone
Spz 11-2
Spz 12-3

French
AMX-30
AMX-13
AMX-13 + SS11
AML H-90
EBR-75
AMX-30 155 howitzer
AMX-10
AMX-30 with Roland
AMX-10 with HOT
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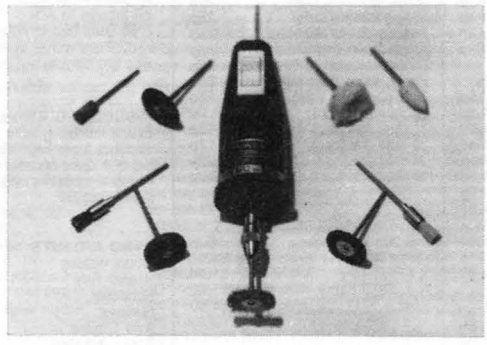

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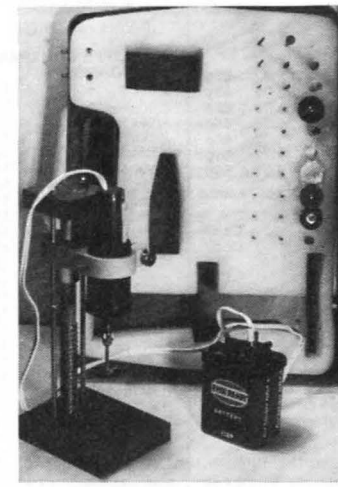

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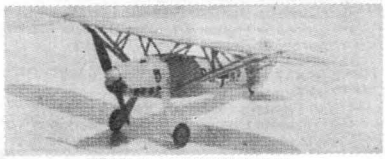

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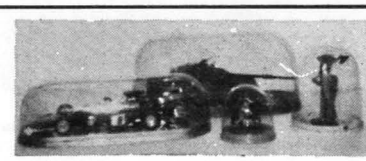

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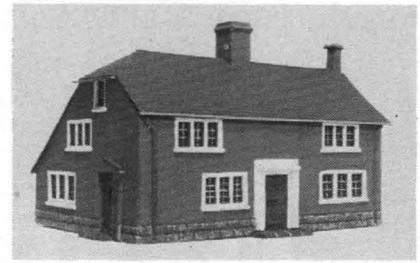

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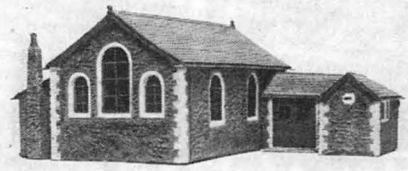

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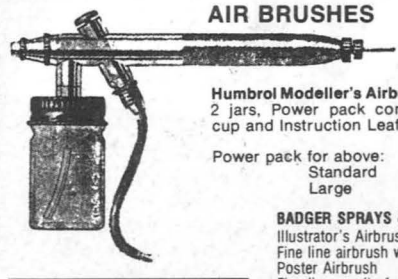
and naturally visitors are always welcome to OUR SHOP.

AIR BRUSHES



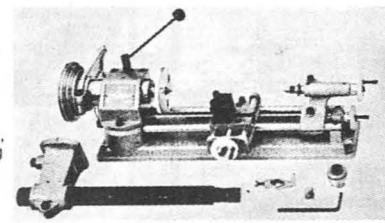
Humbrol Modeller's Airbrush set of Airbrush, 2 jars, Power pack connector, Measuring cup and Instruction Leaflet **£3.49**

Power pack for above:
Standard **80p**
Large **£1.25**

BADGER SPRAYS & AIRGUNS

Illustrator's Airbrush, with cup	**£30.00**
Fine line airbrush with cup	**£30.00**
Poster Airbrush	**£32.10**
Fine line gravity feed airbrush	**£30.00**
200-EX Air brush set without propellant	**£20.45**
250-1 Basic spray gun set without propellant	**£5.06**
Spares for above:	
Propellant Mogramair 20 oz	**£1.25**
Compressor with ¼" pipe, thread ftg	**£48.00**
Foot switch	**£5.90**
6' air hose	**£1.80**
10' air hose	**£2.25**
Propellant on/off valve	**£1.25**
Propellant air regulator	**£2.96**
Tyre adaptor	**84p**
Air filter for use with compressor	**£8.80**
1 oz jar with cover	**19p**
2 oz jar with cover	**24p**
Jar gaskets (3)	**18p**
Jar hose	**12p**
Needles 200 or 100XF or 100IL	**70p each**

UNIMAT UNIVERSAL MINIATURE MACHINE TOOL

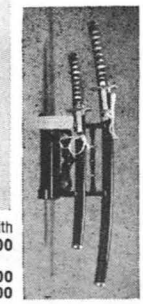


Universal Workshop. 240 v AC/DC motor complete with 3 jaw lathe chuck with fitted backplate **£107.00**

Extra equipment for above:

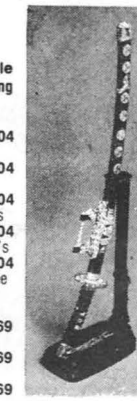
3 jaw chuck for direct mount to spindle	**£14.00**
4 jaw independent chuck to mount as above	**£15.00**
Drill chuck ¼" capacity	**£4.00**
Machine vice 1½" width of jaws	**£9.00**
Collet attachment with backplate	**£9.00**
Collets for U1020, 1/32" — 5/16" × 1/32" alternatively 0.5 mm-8 mm × 0.5 mm	**each £4.25**
Watchmaker's collet sleeve	**£29.00**
Polishing spindle	**£6.00**
Extended spindle	**£7.00**
Planing attachment	**£15.75**
Routing attachment with routing cutter	**£13.00**
Jigsaw complete with 12 blades	**£21.00**
Toolbox consisting of: 2 tool bits, 4 twistdrills, 2 milling tools, 1 centre drill, 1 countersink bit, 2 grinding wheels, 2 gravers for wood turning	**£12.00**
Toolbit in case containing six assorted turning tools	**£9.75**
Steady for woodturning	**£2.00**
Swivel toolrest for woodturning	**£5.50**
Spur drive for woodturning	**£1.40**
Milling table with 2 clamps	**£6.70**
Single ballbearing live centre	**£4.00**
Double ballbearing live centre	**£5.00**
Sawblade 2⅜" diameter (fine teeth for metals)	**£4.50**
Sawblade 2⅜" diameter (coarse teeth for wood and plastics)	**£2.20**
Sawblade 3⅝" diameter (coarse teeth for wood and plastics)	**£3.00**
Circular saw attachment for 3⅝" diameter blade (also suitable for 3⅝" diameter blades but adaptor U1311 is also required	**£11.60**
Mitre gauge for U1240	**£3.60**
Flexible shaft	**£18.00**

JAPANESE SWORDS



MIDORI 1/3 Scale
Two in one box (long and short swords)

Yagyu Jyubei's swords	**£2.04**
Araki Mataemon's swords	**£2.04**
Kenshin's swords	**£2.04**
Miyamoto Musashi's swords	**£2.04**
Toyotomi Hideyoshi's swords	**£2.04**
and the original three single swords	
Takada Shingen's sword	**£1.69**
Yoshitsune's sword	**£1.69**
Yoshitsuna's sword	**£1.69**



BUCKINGHAM PEWTER FIGURES

No 13 Pipe Major Scots Guards
No 14 Sergeant East Surrey Rg. 1849
No 15 Pvt Grenadier Guards 1829
No 16 Chasseur La Guarde Imperial 1809
No 17 Infantryman 1775

88 mm Scale

Grenadier Guard 1735
Scots Guard 1820
Parachute Regt. 1974
Coldstream Guard 1815
French Imperial Guard 1809
French Hussar 1815
American in Hunting Shirt 1776
Coldstream Grenadier 1776
Queens Grey Officer 1680
Queens Regt. (N. Ireland) 1975
Scots Guard (N. Ireland) 1975
3rd New Jersey Regt. Private (Jersey Blues) 1777

£6.30 each

POSTAGE

Minimum Charge

Up to £1	**35p**
£1-£2	**60p**
£2-£3	**80p**
£3-£4	**£1.00**
£4-£10	**£1.20**
£10-£15	**£1.50**
Over £15	**Free**

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